Published
the 18th of each month by
PRACTICAL
PUBLICATIONS
Incorporated
342 N. Meridian St.
Indianapolis 4, Ind.
Telephone Riley 6771

Industrial FINISHING

W. H. ROHR, Editor P. C. BARDIN, Associate Editor

Contents

APRIL, 1949
Vol. XXV, No. 6

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Published monthly to finishing and paint shop foremen, plant superintendents, chiefs, purchasing agents and many executives of metal-working, woodworking and miscellaneous industrial plants for production cleaning and finishing are major operations in parts and products manufacture.

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Subscription Rates Per Year
U. S. and Possessions.....$3.00
Canada and Foreign Countries.....$4.00
(No subscription solicitors are employed)

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Acceptance under Section 34.64, P. L. and R., authorized.

25 TWENTY-FIFTH YEAR OF PUBLICATION

Sales Effectiveness. The importance of sales was emphasized by F. Doscher, vice president in charge of sales for Lily-Tulip Cup Corp. at a recent meeting of the Sales Executive Club in New York. "A well trained and productive sales manager or salesman can always pick and choose his employer," said Mr. Doscher, who also advised business firms to weed out non-producers in sales, and to install long-range well-planned training courses.

Back in scramble-for-production days, management did not count the cost of equipment that would increase efficiency. Now that sales are paramount, management should not count the cost of increasing the efficiency of its sales organization, for it promises to be an important department for a long time to come.

* * *

Advertising. Of equal importance with sales, the need for advertising should not be overlooked. At the winter meeting of the National Retail Furniture Association, Walter D. Fuller, president, told members "that the last depression followed a slackening of sales effort during the wave of prosperity in the late '20s."

No one believes that the last depression was caused entirely by this condition, but on the other hand we cannot take our good business and prosperity for granted. Advertising is one of the principal tools of selling. *People seldom buy any product that they never heard about.*

Air Meter, known as "Anemotherm" has been developed. It gives air velocity, air temperature and static pressure readings simply by turning a knob. The meter is designed to test and adjust heating, ventilating and air conditioning equipment.

With this device it would be possible to learn a lot about conditions in finishing rooms, pressurized areas, ovens and spray rooms. It might be the means of making corrections that would eliminate some finishing troubles. At least it would take the guess work out of what is actually taking place.

* * *

Emergency Light. A brand new safety device that provides instant, automatic light when the regular source of current is interrupted has been announced. When the current is restored the emergency light goes off automatically. The soft, glareless fluorescent light will provide approximately ten hours of emergency service with standard dry cell batteries which are obtainable everywhere. Uses standard Mazda fluorescent lamp. No special wiring needed. Plugs into any 115-volt AC outlet. Has convenient carrying handle and can be used as a hand light. Weighs only 9½-lbs.

* * *

Industrial Instruments. The use of industrial instruments for finding and recording facts, and for controlling operations, conditions and equipment is becoming more widespread. Man-

(Continued on page 6)

"From the Start . . . Consider the Finish"

USE FASTAIN

The answer to your STAIN problems:

Fast to light; to apply; to dry.
It's clear, clean, permanent!

Use FULL-FILL FILLERS

Eliminate puffing, shrinkage and haze. Easy wiping, fast coating. Light-Last transparent colors.

V. J. DOLAN & COMPANY, Inc.

Manufacturers of "Unquestionable Quality"
Lacquers, Sealers, Thinners, Bleaches, Etc.
1830 N. Laramie Ave. Chicago 39, Ill.

ONLY

DETROIT HANDY "TAC" RAGS ARE

NON-INFLAMMABLE

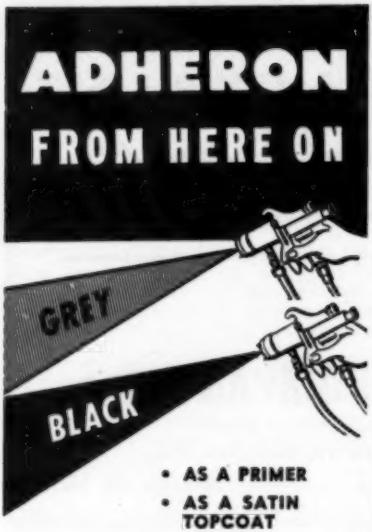
This NEW exclusive feature has been developed after years of research. For 15 years Detroit Tac Rags have been the standard of quality. Now—we give you this new exclusive safety feature at no extra cost.

DETROIT HANDY TAC RAGS—In removing all particles of lint, dust, or sand, preparatory to lacquering or enameling—insure a smooth, perfect, mirror-like finish—with this additional assurance of freedom from fire hazard.

Compare the flame resistance of Detroit Tac Rags with ALL others. Our patent pending formula — eliminates for all time your worry of fire caused by highly combustible tack rags. Available at your local paint dealer or write for address of nearest supplier.

DETRO MFG. & SALES COMPANY, INC.

3429 Wesley Street Culver City, Calif.



AND NOW* RED *TOO!

Surfaces that resist other lacquers are a push-over for ADHERON. When ADHERON goes on, it stays on. That goes for aluminum, brass, copper, steel—and even tin.

ADHERON air dries. Dust free in 10 minutes; 2 hours to handle. Reaches full hardness overnight. Can be baked.

WRITE FOR SAMPLE.

SEA-LAC

DURALAC CHEMICAL CORP.

84 LISTER AVE., NEWARK 5, N. J.

agement wants to know more about what goes on, it wants to improve manufacturing processes, eliminate the human element in routine controls, reduce spoilage, lower costs and make the job of production easier. Mechanical instruments will do the job truthfully, continuously and with great fidelity around the clock. There is a device suited to nearly every job.

* * *

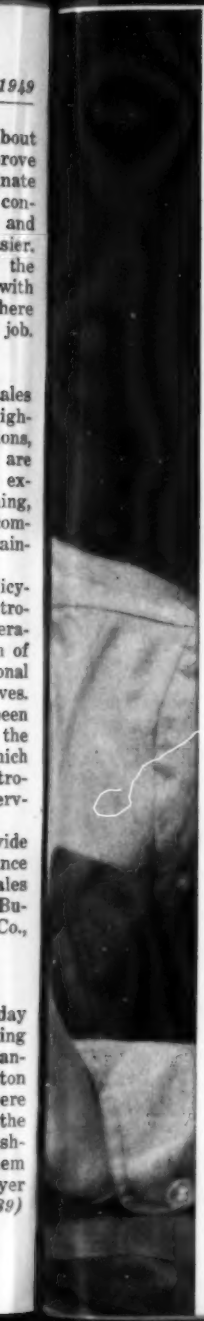
Training Salesmen. Increased sales volume, lower distribution costs, higher profits, better customer relations, and lower personnel turnover are some of the results that can be expected from successful sales training, according to a survey of selected companies with progressive sales training programs.

The survey was made by the Policyholders Service Bureau of the Metropolitan Life Insurance Co., in cooperation with The National Federation of Sales Executives and the National Society of Sales Training Executives. Findings of the survey have been published by the Metropolitan in the report, "Training Salesmen," which was issued as a part of the Metropolitan's continuing program of services to Group-insured companies.

Purpose of this report is to provide executives with practical assistance in reviewing or developing sales training. Policyholders Service Bureau, Metropolitan Life Insurance Co., 1 Madison Ave., N. Y. 10, N.Y.

* * *

Industrial Wash Day is every day at a large ball and roller bearing plant. The concern uses large quantities of wiping cloths and cotton gloves. Formerly these items were sent out for laundering. Then the company installed an industrial washer that washes, rinses and spins them half dry. A gas-fired clothes dryer completes the job. *(Cont'd page 89)*



HOW HARD
should a finish be?

The relative "hardness" of an industrial finish is only one of numerous factors contributing to the overall durability of the finish. But the question is often asked, "How hard should a finish be?" And the obvious answer is the correct answer.

The degree of surface "hardness" is dependent upon the usage that the finished product will receive.

The important factor, however, is the ability of the paint manufacturer to determine precisely *what* degree of "hardness" is needed for a given product finish. Beyond this, he must be able to maintain (from month to month and from year to year) absolute uniformity of hardness, of color, of resistance to heat, cold, chemicals, etc.

In order to maintain positive quality control, the paint manufacturer should have:

1. Capable and adequate technical personnel.
2. Complete, scientific laboratory and field testing equipment.
3. Diversified experience in the making of industrial finishes.
4. Dependable production facilities.

You'll find all of these at the Rinshed-Mason Company. Need help? Drop us a card today.

Rinshed Mason Company

R·M

5935-71 MILFORD / DETROIT 10 / MICH.

Manufacturers of Industrial, Automotive and Architectural Paints, Lacquers, Enamels, Varnishes and Undercoats for all special and standard requirements.

A list of the principal causes of fire in industrial finishing plants. Remove or correct them and you eliminate the threat of fire in your establishment.

Causes of Fires

1) Spontaneous ignition 18%
2) Overheating liquids during processing 16%
3) Misuse of electricity.... 10%
4) Explosions (flammable liquid vapors or gas or explosive chemical) 6%
5) Smoking and matches.... 5%
6) Friction sparks 4%
7) Heating defects 3%

Let's Prevent More Fires

By Mario DeMatteo

Fire Protection Institute
670 Fifth Avenue
New York 19, N. Y.

AMERICAN industry suffered approximately 150 million dollars in fire losses during 1947, according to annual reports of fire marshals throughout the country. Few types of industries escaped the 12-month period of unprecedented needless destruction of valuable property and machinery. While the breakdown of industrial fire losses for 1948 is not as yet available, fire prevention experts predict that last year's losses will exceed those of the year 1947.

The products finishing industry is aware that it is not, nor has it ever been, free from fire losses. Perhaps in no other industry are the hazards of fire more prevalent. Yet most fire menaces can be minimized by fire-safety measures, and "unavoidable" fire losses can be reduced by adequate fire protection. Management should regard fire hazards as dangerous as thieves,

and they should consider fire extinguishers as vital parts of their plant as the machines that keep them in business.

Alert management can solve the fire-safety problem in finishing plants, just as they can solve other problems of production, distribution and sales — by acquainting themselves with the facts. In plant fire-safety, three factors should be considered: 1) fire-resistant construction, 2) fire hazards, and 3) plant fire protection.

First, fire-resistant construction. In 1948 there were 275 fires which resulted in the loss of more than $250,000 each. Of these, 88 caused damage of more than one million dollars each. One of the reasons for high losses in these fires was inferior construction of plants and business buildings.

Fire Hazards . . .
Where, What, Why

Once a fire gets out of control in a large, poorly constructed plant it becomes almost impossible to extinguish. Open wall spaces, open elevator shafts and combustible doors and walls separating factory floor areas give fires free roads to destruction.

Management in doubt of the ability of plant buildings to confine fire to the room in which the blaze originates should consult reputable building contractors for recommendations. Fires in well-constructed buildings seldom mean total loss.

Second, fire hazards. Determining fire hazards for any particular plant is sometimes difficult, since fire hazards depend upon the processes used in manufacturing. However, there are fire hazards that are common to all types of industrial plants.

In industrial finishing plants these common fire hazards start approximately 26% of the fires within the industry. Most notorious of these hazards is spontaneous ignition. The materials subject to spontaneous ignition and the conditions under which material can ignite spontaneously are many and varied. In the industrial finishing industry, rags and rubbish soaked in paint materials or oils or solvents are major offenders. This hazard can be reduced by getting rid of rubbish regularly and by storing all the oily rags in metal containers.

Electrical defects and the misuse of electricity constitutes another common fire hazard. Maintaining motors, electric circuits, and other electrical equipment in good working order at all times is the best way to avoid fire from this source. Inspection crews should check equipment periodically and keep motors well lubricated. The motors should always be kept free from accumulations of grease and lint.

Smoking and matches remain in top listing of common fire hazards. "No Smoking" regulations should be enforced in hazardous or semi-hazardous manufacturing plants. One means of overcoming the smoking problem in plants is to have "safe smoking" areas where employes can enjoy a cigarette or pipe without worrying whether or not they will start a fire.

One of the outstanding special fire hazards generally responsible for starting fires in finishing plants

is overheating or boiling over of flammable liquids during processing. Preventing fires from this process requires constant warnings to employees engaged in work with this equipment.

Only experienced workers should be permitted to operate the equipment. Occasionally heat control thermostats on such units become defective. These defects can sometimes be detected in the early stages by regular inspection.

Dip tanks used in finishing plants present another special fire hazard. In some cases, four or five dip tanks are placed in a row and contain up to 10,000 gallons of highly flammable liquids.

Dip Tanks; Spray Booths; Ventilation; Cleanliness

The principal fire hazard from dip tanks results from vapors from flammable liquids. These vapors, usually heavier than air, settle in low places, usually in corners where air does not circulate. Proper ventilation of plant areas where dip tanks are used is essential. Usually a moderate circulation of fresh air will insure safe operating conditions by preventing accumulation of vapors.

Fires in dip tanks produce smoke and gas which makes fire fighting difficult. Automatic fire extinguishing equipment should protect such equipment. Foam or carbon dioxide fire extinguishing agents, equipped with fire detecting units are ideal for attacking fires in dip tanks and putting them out quickly.

One of the best known special fire hazards in finishing plants or in finishing departments of industrial plants are paint spray booths. Areas in which paint, varnishes, lacquers, enamels and similar flammable liquids are used for finishing require complete ventilation to dispose of waste residues and vapors from the process.

There are six principal causes of fire in spray booths. One of them is defective electrical equipment—usually a broken lamp or a faulty light or motor switch. Another is the cleaning of the interior of spray booths, fans and motors with highly inflammable liquids. Others are the accumulations of paint and lacquer deposits inside the booth, on fan blades and in exhaust pipes, defective fans and motors used for ventilating spray booths, poorly designed and poorly guarded booths, and static electricity. All of these fire hazards can be controlled by proper maintenance of spray booths and equipment, and by the exercise of caution.

9 of 10 are Preventable; 10th Can Be Put Out

Fire-conscious operators will familiarize themselves with all fire hazards in their plants and take every possible step to eliminate them. For fire prevention experts agree that nine out of ten fires can be prevented—and that adequate fire protection will take care of the tenth fire.

The third factor in achieving plant fire safety is adequate fire protection. The right type of fire protection equipment, coupled with the proper training in the use of equipment can give industrial finishing plant fire protection that is excellent. *(To page 28)*

WORDS OR FACTS-WHICH DO YOU PREFER?

For the many finishing needs of industry—prove to yourself that UNITED LACQUER can meet your most rigid specifications and cost requirements.

IT'S THIS SIMPLE

1. **Analyze the particular finishing problems demanded by your specific product.**
2. **Write those problems to us on your letterhead or have one of UNITED LACQUER'S technicians discuss them with you.**
3. **We will send you a generous working sample of the best possible formula for your specific needs—absolutely free.**

Send us your problems today.

UNITED Lacquer MFG. CORP.

LINDEN, NEW JERSEY EVERETT, MASS.

lacquers
thinners
synthetics
metallized finishes
special coatings

Provide and Use Proper Fire Extinguishers

In selecting approved fire extinguishers to protect plant areas, the logical approach is to *first determine the fire risk of a particular area and then install fire extinguishers designed to cope with fires most likely to occur in the area.*

In areas where fires are likely to occur in ordinary combustible materials it is usually satisfactory to install fire extinguishers containing soda and acid, foam or loaded stream. These extinguishers have a penetrating quality that will kill subsurface or smoldering fire.

In the plant where fires originate in dip tanks, spray booths and similar rooms where flammable liquids are used, install fire extinguishers containing dry chemical, carbon dioxide, vaporizing liquid or foam. Remember that water thrown on flammable liquid fires will only scatter the flames.

In plant areas where fire may originate in electrostatic apparatus, transformers, power packs and other electrical equipment, place in several locations fire extinguishers containing dry chemical, vaporizing liquid or carbon dioxide.. These extinguishing agents are non-conductive and enable a fire fighter to combat the flames quickly.

OK on Extinguishers and OK on Men to Use Them

It is vitally important to maintain all fire-fighting equipment in good operating condition at all times. These weapons are only used in emergencies where speed, know-how and dependable equipment are essential. Periodic inspection of all fire-fighting devices will uncover defective equipment.

Every employee in the plant should be able to operate fire extinguishers. Today, more and more industrial plants are recognizing the value of company fire brigades. Some of them entrust the training of their men to the local fire department. Proper equipment, plus trained employees is the answer to the one fire that can't be prevented.

Those industrial plants that have successfully thwarted the threat of fire in the past and have kept annual fire losses to a minimum have not trusted to luck. They have combined knowledge of fire hazards, proper equipment, and fire-resistant construction into a system of defense that keeps fire at a distance. Good fire safety is good management. Always be prepared for fire!

C. M. Kolb, Senior V. P. of Glidden Company

Directors of the Glidden Company have elected Clifton M. Kolb senior vice president and member of the executive committee, Dwight P. Joyce, president, announced today.

Clifton M. Kolb Elected Senior Vice President of Glidden Co.

Mr. Kolb, who has been secretary of the company since 1929, began his career with Glidden in 1922 as head of the legal department. He was appointed assistant secretary in 1923 and elected a director of the company in 1938.

Dedicated to *better* finishes

Paralleling the progress of product design and development, Stanley's research staff has created many new and improved finishes for metal, rubber, plastic and textile products.

For example: There are coatings that have better adhesion and corrosion resistance . . . coatings to preserve and protect against the affects of moisture, gases, acids and alkalies . . . coatings that will unquestionably add greater sales appeal to your products.

If you have a product, regardless of its material, requiring a finish with special characteristics, ask us about it. **Stanley Chemical Co., East Berlin, Conn.**

STANLEY CHEMICAL

INDUSTRIAL COATINGS

LACQUERS SYNTHETICS JAPANS ENAMELS

finishing ELECTRIC CLOCKS

By Joseph St. Pierre

Finishing Foreman of The E. Ingraham Co., explains how automatic equipment plays an important part in finishing new enameled clock cases.

THE MODERN TREND in certain models of metal-cased clocks is toward enameled cases. This is especially true of clocks for bedrooms and kitchens. To finish these clocks in large volume, including all of the parts, such as bases, backs, bezels*, etc., would be a costly and slow procedure if it were not for conveyorized automatic equipment. For mass production, quality of finish and economy, we operate three automatic spray-bake machines.

Before metal parts are received in the finishing room, they have gone through a metal cleaning process in which an alkali cleaner is sprayed at 200° F., followed by a cold water rinse, a hot water rinse at 200°F., and a trip through a dry-off oven for 12 minutes at 200° F.

Coating and Baking Backs and Bezels

Upon arrival in the finishing room, the various parts are separated. All flat pieces such as backs and bezels are finished on one particular spray-bake unit equipped

*Metal rim which holds the crystal.

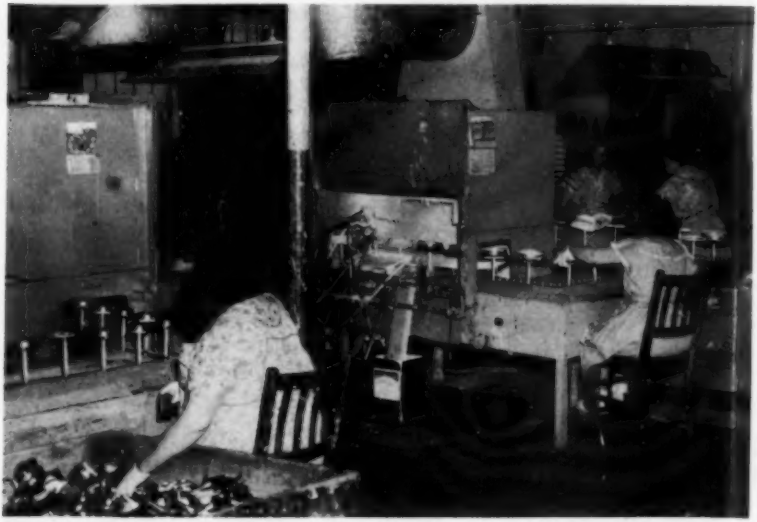
with two automatic reciprocating spray guns. This unit has a horizontal metal belt conveyor and the parts are placed on heavy wire mesh trays for painting.

The loaded flat trays are placed on a conveyor belt which carries them under the reciprocating spray guns to receive a coat of pigmented synthetic enamel. The viscosity of this enamel varies with the color. We use an atomizing pressure of 60-lbs. and a fluid pressure of 30-lbs. Spray-painted parts immediately enter an electric oven where the finish is baked for three minutes at 400° F. The oven is heated by electric strip heaters. The finishing cycle on this unit is four minutes.

Due to the length of this unit and the physical layout of the finishing room, it was necessary to make a 90° turn in the conveyor at the exit end of the oven. To accomplish this turn, the metal belt conveyor returns just inside the exit end of the oven, and loaded trays are carried around the 90° turn and forward to the unloading station on power driven, tapered wood rollers, as shown herewith.

By having the small clock parts resting on flat wire mesh trays

Exit end of electric oven in automatic spray-bake setup for painting clock backs and bezels. Loaded wire mesh trays go around the 90° turn on tapered wood rolls without a spill.



The loading or infeed ends of two automatic spray-bake machines. Parts to be painted and baked are placed on traveling vertical spindles which rotate as they pass the spray guns.

they go around the right angle turn, over rollers with no danger of their falling between the tapered wood rolls at the outfeed end of the oven.

Finishing Clock Cases Automatically

Clock cases, both steel and die-cast aluminum, go through the metal washer and dry-off oven, after which they are finished on two spray-bake conveyor machines. Each of these machines has a spray booth with a built-in exhaust system, a bed chain conveyor (with spindles on 1-in. centers) driven through a variable-speed drive, with a speed capacity up to 125 spindles per minute. On 1½-in. diameter cases we use a speed of 65 spindles per minute, while on 10-in. diameter cases, the speed is reduced to 40 spindles per minute. There is ample loading and unloading space, since on high speed production it requires two loaders and also two unloaders.

The oven through which finished parts pass for curing is 40-ft. long, and is equipped with electric strip heaters. These heaters operate on 220-volt AC and pull from 500 to 1200-watts, depending upon the temperature demands. To give you some idea of the oven heat requirements, on die cast cases which require an operating temperature of 580° F., the oven pulls 1000-watts. On steel cases, for which the finish is cured at 400° F., the oven pulls 750-watts. *(To page 34)*

"Oakite's new method for cleaning brass and copper before nickel and chrome plating is tops!"

From Connecticut to California, electroplaters are enthusiastic about the NEW Oakite brass-cleaning method that gives good protection against tarnish along with effective removal of oils and buffing compounds. Here are a few comments:

Wonderful cleaner for brass . . . Results have been excellent . . . Not a single reject on brass and copper work in two months . . . Good cleaning combination . . . All parts plate perfectly . . . Worth its weight in gold . . . No discernible tarnish during anodic cleaning . . . Rejects at lowest point ever . . . Nickel plate extremely adherent, very bright and lustrous . . . Getting excellent results in automatic plating machine . . . 15 to 20 seconds reverse did perfect job . . . Much brighter plating, much better adhesion . . . Could not detect any tarnish . . .

FREE Write today to Oakite Products, Inc., 32F Thames St., New York 6, N. Y., for full information.

OAKITE

REG. U. S. PAT. OFF.

INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. & Canada

Some of you readers may wonder how a conveyor chain can withstand temperatures up to 600° F. In these machines *the chain does not pass through the oven; it travels along just under the bed of the oven.* The spindles and work holders extend up into the oven itself. The open space on each side of the chain provides an air intake. Exhaust fans on top of the oven remove fume-laden air. This arrangement of supplying room air at the bottom and removing fume-laden air at the top of the oven provides ample circulation of air inside the oven for the curing process.

Three fixed spray guns apply pigmented synthetic enamel to the clock cases as the latter are mechanically revolved on the spindles while they pass through the spray booth. The speed at which the spindles rotate in front of the spray guns varies with the diameter of the clock case; this speed must be synchronized with the action of the spray guns and the conveyor speed.

Spray painted clock cases immediately enter a 40-ft. oven where they are preheated for 30 seconds at 200° F., after which the finish is cured for 2½ minutes at 580° F. Leaving the oven, cases are cooled with the aid of electric fans for 30 seconds.

Needless to say, the workers wear asbestos gloves while removing cases "hot from the oven" to stack them on tiered trucks for delivery to the assembly room. On die-cast clock cases the finishing cycle is four minutes. On steel cases the time is cut to three minutes. The two units have a finishing capacity of from 1500 to 12,000 pieces per hour, depending upon the type and diameter of the part.

In two waist-high spray booths small parts such as clock hands are sprayed. Clock hands in multiple are placed on flat wire mesh trays for finishing. The operator uses low air pressure and points his spray gun straight down to prevent blowing clock hands off the tray. The clock hands are run through the force-dry oven, then reversed and sprayed on the other side.

Reversing clock hands on the tray is simple. An empty tray is placed over the loaded tray, held tightly in place, and the pair are turned over. The original tray is removed and the hands are ready to be sprayed on the other tray.

Spraying through a precision metal mask to make gold stripes on edge of clock case.

Short stripes of gold and silver and other decorations are applied by hand spraying through precision metal masks. Long stripes are applied by hand, using a striping brush. Lacquer base materials are used for this type of work. The manually sprayed parts are placed on a horizontal metal belt conveyor which carries them through a force-dry oven three minutes at 150° F.

Production-Line Processing of
ALUMINUM for PAINTING

Simple cleaning and corrosion proofing treatment, as used on aluminum castings for outboard motors, has worthwhile merits.

By Arthur P. Schulze

THE CLEANING and corrosion-proofing of aluminum castings, in preparation for painting, are operations of importance in all plants that finish products or parts fabricated from this nonferrous metal. At Martin Motors Division of National Pressure Cooker Co., Eau Claire, Wisc., this work is handled at high speed and low cost with one simple chemical treatment. A non-electrolytic surface-preparation technique known as "Alodizing" has been adopted and placed on a production-line basis for the outboard motors.

The Martin "60" is a light but powerful motor that idles down for trolling and also develops high power output at wide open throttle. It weighs about 43-lbs. and develops 7.2-hp. at 4000-rpm.

Aluminum castings and stampings are used to attain this low weight - horsepower ratio without

Alodized and painted Martin outboard motors, protected against moisture and weather.

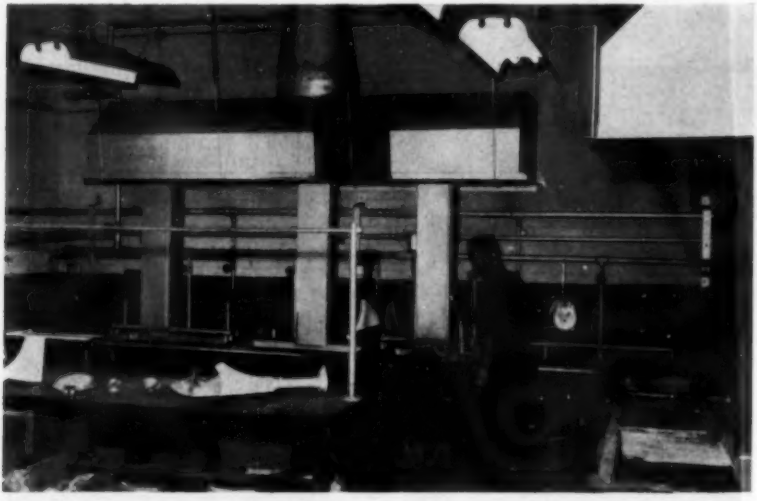
sacrificing the essential quality of strength. These aluminum parts receive a chemical treatment to provide them with protection against the corrosive effects of marine environments and to prepare the surfaces for a protective coating of aluminum lacquer.

The operational cycle, as used at Martin Motors, includes seven steps, all of simple character. Parts are first cleaned in a conveyor-type vapor degreaser for 2¾ minutes, then agitated and rinsed in cold water. Where solvent becomes entrapped in recessed areas, the castings and stampings are subjected to a blast of clean compressed air to blow off any remaining liquid. Of course, if the aluminum parts are clean the degreasing and follow-up rinsing can be omitted.

Next, the parts are immersed for three minutes in the "Alodine" solution at 120° F. After a cold water rinse, they are dipped in a cold chromic acid solution for three minutes; they are dried for five minutes in a tank equipped with infra-red lamps.

Immersion in an oil bath at 230° F. for 20 minutes is prescribed for those die castings that make up the gear case and propeller shaft bearing housing assembly, which contains two porous Oilite bearings cast into place. Immersion of these particular parts in the oil bath expels the moisture absorbed in Alodizing the die castings, and also impregnates the porous bearings with a lubricant.

The seven tanks (each 30x30x35-in.) used for processing are fab-



Alodizing installation at Martin Motors Plant. The operator is dipping racked aluminum propellors into tank containing "Alodine" chemical solution.

From Start to Finish

YOUNG & BERTKE

FINISHING SYSTEMS

Whatever your requirements in a finishing system, spray booths, laboratory ovens, conveyor type ovens, etc., Young & Bertke can plan an efficient finishing system for you that will best fit your individual needs. Call on us now, our engineer will be glad to consult with you on your finishing problems.

The YOUNG BERTKE Co.

1124 HULBERT AVE. **CINCINNATI, OHIO**

ricated from mild steel with the exception of a tank holding the Alodine chemical bath. This particular tank is made of stainless steel. The three tanks requiring higher than room temperature are heated by steam and with electric immersion heaters.

By confining the radiated heat, the closed area of the oil bath tank which is equipped with infra-red lamps, increases the drying effect. Eventually this tank will be replaced with conveyorized drying equipment.

This fast-working surface-conditioning treatment produces a hard, thin, tightly adherent coating which increases the abrasion resistance and corrosion defiance of both painted and unpainted aluminum. It also provides a smooth, adhesive bond for the aluminum lacquer coating which is finally applied.

The protective effect of Alodizing on aluminum is comparable with that secured by electrolytic anodizing, yet the process requires less floor space and less equipment. Moreover, sealing the surface as a separate operation is eliminated. Alodizing performs the dual job of coating and sealing the surfaces simultaneously.

Since the metal dissolved in the coating cycle is infinitesimal, the dimensions of treated parts remain practically unchanged. The Alodized coating becomes integral with the base metal surface and is as flexible as the metal itself. Various aluminum alloys in any combination may be treated equally well in the same chemical solution.

Author's Note: Photographs in this article were furnished through courtesy of Martin Motors Division, National Pressure Cooker Co., Eau Claire, Wisc., and American Chemical Paint Co., Ambler, Penna.

ZONE BAKING. A few firms who bake enamels on metal products have found that zoned baking gives best results. In this process the baking oven is divided into two or three zones. In the first zone, the temperature is comparatively low but the rate of air change is high in order to remove solvents without blistering the coating. In the next zone the maximum heat, with less air movement, prevails. This area is where the enamel is baked to a hard film.

In a 3-zone oven the third zone may be the one of maximum heat, the second zone being intermediate between the first and third. Such zoned ovens have been used in baking out wrinkle finishes. They are practical, of course, only along conveyor lines where movement of the painted products is uniform.

Zoned setups have been used for infra-red baking, the second zone having a high energy input to bring the metal up to top temperature. The third zone has less input to maintain top metal temperature.—R. H. WAMPLER.

INTERIOR COATINGS FOR TANK CARS. Did you know that special paint coatings are being used on the inner surfaces of railway tank cars? These coatings protect the metal from rust, and the contents from contamination with iron. Such widely varied products as corn syrup, wines, invery sugar, special oil, formaldehyde and other chemicals are transported in such lined cars.

The interior is first sandblasted. Then a number of coats of the protective material, usually a liquid phenolic resin, are sprayed on. The film is baked by forcing hot air through the car. The baking time is around ten hours. The cars are temporarily insulated during this period to conserve heat.—R. H.

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THE SILK SCREEN PROCESS FOR *Industrial Users*

By J. I. BIEGELEISEN

Author and Technical Consultant on Silk-Screen Printing

PART III

THIS IS the third installment in the series of three articles on the Silk Screen Process. As a final payoff, I thought some questions and answers might be appropriate. Let's dig our hands into the old hat and pull out the questions. If, after you have read them all, you still find some of your own personal queries unanswered, send them along and I am sure we can persuade the powers that be to publish additional questions and answers in some future issue of INDUSTRIAL FINISHING.

We came across an article in an art magazine where the silk screen process is referred to as "serigraphy." If there is any difference between the two, just what is it?

"Serigraphy" is a newly coined word (seri- meaning silk; graph, meaning write or print) which refers to the process as applied to fine art. Many artists, easel painters and fine printmakers are now dabbling in silk screen. They like to refer to the process as "serigraphy. Between you and me and the printer next door, it's "silk screen."

Does anybody control any patent covering the process as a whole or any part thereof?

That legal-sounding question has been asked many times. The process itself is not patented. However, a Philadelphia lawyer managed to get a patent covering all silk screen printing on round surfaces. A firm in Philadelphia has developed special machines for silk screening on round (cylindrical) objects such as bottles, containers, etc. The firm offers these machines for sale or rental (on a royalty basis). But—here's where the rub is—whether you use any of its machines or not, you are still legally bound to pay royalties based on all round print-

ing that you produce, even though you have improvised your own round printing machine and it is better than one you can buy or rent. There are no legal restrictions for silk screen printing on flat surface. The field is clear.

Machines That Do Good Silk Screen Stenciling

Speaking of machines, how much of all silk screen work is done by machines or presses?

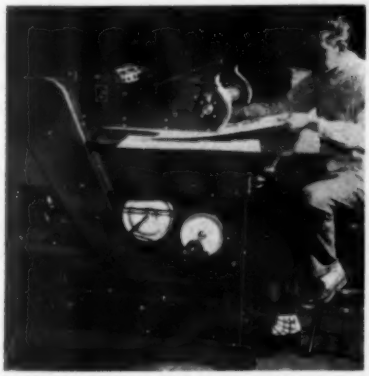
Practically all printing on round surfaces is done with semi or completely automatic silk screen machines. That's how they print designs and trademarks on milk bottles, beverage bottles, decorative display glass, glass, metal and plastic containers and all sorts of round objects turned out in large volumes. As far as flat printing is concerned, the major work is still done by hand. Machines are not as practical as hand operated equipment.

Why?

Simply because silk screen can be used for so many different printing jobs that it has been found impossible to devise a machine that would be good for all jobs. The process itself is more versatile than any machine could be.

You mean it's not possible to get a machine that would be so adjustable?

Precisely. Take the matter of size. By using hand-made equipment, you can build a stencil to print any size, even 15-ft. signs done in one section, or you can print a tiny decal the size of a postage stamp. That's a lot of latitude. There is also the widest



This machine is used to print, stencil or paint signs for advertising purposes, decorations, etc., with silk screen process paints, enamels, etc., on flat surfaces such as wood, metal or glass.

range in the type of stock you can silk-screen, anything from flimsy tissue paper to 5-ply panel board, from heavy sheet metal to gossamer-spun silk. You can even print on already fabricated products such as tabletops, toys, cabinet drawers.

Conditions Favorable to Use of Machines

When and where are machines used?

Whenever you have enough work to keep a machine busy with some standard size or thickness of stock. Decals, for instance, are printed by silk screen machines. Sizes are more or less standarized as is the thickness of the decal paper, etc. If you're producing any type of job suitable for silk screen and are turning out enough of one type of work to keep a machine in steady operation, well then there are machines on the market to do the work for you. Even if you have a special

requirement not met by existing machines, a special press can be built to your specifications.

Just one more question regarding machines; how fast do they operate?

This will depend on the type of material you are printing. If you are printing heavy sheet metal large enough to cover a door, you can't operate the machine as fast as when you are silk-screening little celluloid doilies. However, not to evade a direct answer, let's assume you are printing a 14 x 22-in. job on some light weight material. By hand squeegeeing, you can expect about 300 impressions an hour; by machine, about 1000 impressions per hour.

Many Types of Art Work Can Be Reproduced

What type of art work can be reproduced by silk screen?

Practically any type of art can be reproduced—anything from letterpress or line drawing to a full color job showing a smiling girl holding a bottle of Coca Cola. The Coca Cola Co. has made considerable use of silk screen for 4-color process reproduction on outdoor metal display signs. Commendable 4-color halftone work is produced by a number of concerns, and they are very proud of their achievements. However, I would say that the process gives best results when the art work is done in a limited number of distinct colors in poster technique; in other words, where the art work is planned for silk screen reproduction.

How should the art work be prepared?

It can be larger, or the same size. It can be in color or black and white; finished to perfection or roughly sketched in pencil with colors merely indicated as notes to the silk screen man. It depends on what type of stencil method you are going to use. You know there are two main types—hand-made stencils and photography-made stencils. For hand-made stencils, color, ink, or pencil art work are acceptable; for photographic stencils, the art work should be in black and white or full color, similar to what is acceptable to other printing process involving photo-engraving.

How does one judge if the job is to be done by photo-stencil or by hand-made stencil?

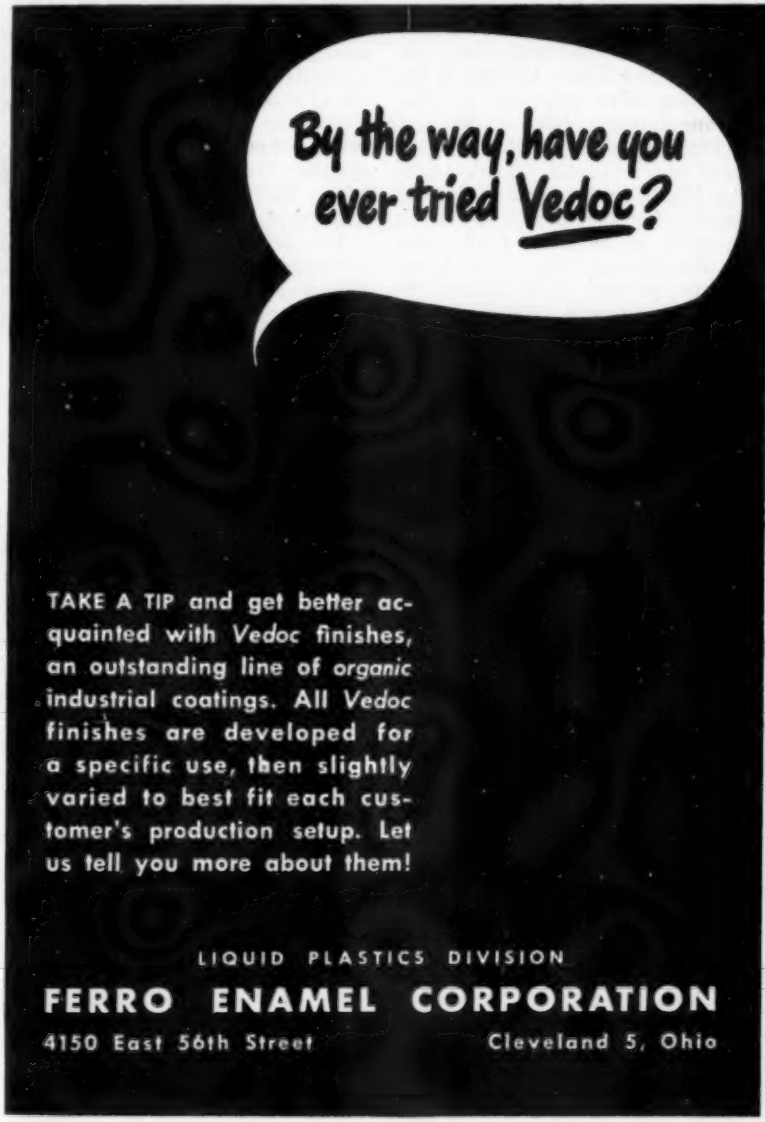
The simpler jobs, with large lettering or design areas, are usually produced by hand-made stencil methods. In that case, your art work need not be "finished". The stencil man can true or fix up the art as he makes the stencil. For small lettering or designs too fine for hand-cut stencils, the art work naturally must be as perfect as you'd expect the reproduction to be. Typical of such jobs are fine trademarks, intricate line drawings, instrument markings, wood grain imitations, small point printed matter, halftone and benday work.

Multi-Color Jobs; Stencil Making

In reproducing multi-color jobs, how are the colors separated for stencil making?

Well, in all hand-made stencil making methods (tusche, block-out,

(Continued on page 48)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paper, hand-cut film) a stencil is made for each color. The stencil-maker is concerned with one color at a time and makes his stencil for each respective color by picking out one common color on the art work. The color separation, you might say, is visual. If it's an 8-color job, he mades eight individual stencils; he selects and works on one color at a time. Each color has its distinct color boundaries and is printed individually, in register, of course. When the art work is a Kodachrome or is painted in an infinite number of colors, realistic fashion, the 4-color photographic process is employed. In that case only four main colors are used (blue, red, black and yellow). The camera does the color selection much the same as in other photo-engraving processes. Four main stencils are used and printed in register.

You say "main stencils". Are additional stencils ever needed besides the four "main stencils"?

Yes, sometimes. On very finicky jobs, two reds and two blues may be necessary; also a special gray. However, that's not only true of silk scren, but of lithography and halftone letterpress work.

Competition with Other Processes

Why isn't the 4-color process photo silk screen method used for all jobs?

It's costly and the results do not compare favorably with lithography and letterpress. Very few shops are equipped to handle 4-color silk screen work. Hand-made stencils offer some incontestable advantages over other ways of printing. They are faster for short runs, more economical, more suitable for a greater variety of materials and sizes, and they save considerable cost in the preparation of art work. When you employ the 4-color photographic process, you are competing with traditional advantages of lithography and letterpress.

We know that our main subject at present is silk screen and not lithography. However, in order to understand the silk screen process better, we'd like to know just what it can do that lithography, or for that matter any other process, can't do as well?

In other words, you'd like to know the special advantages of silk screen.

Yes, also the limitations.

A discussion of the pros and cons of silk screen need not lead you to decide right now that you will always use or never use the process. It's not a debate where you take sides. It's wise to learn all about the process and see just where it can fit in with your production set-up. As to the distinct advantages, I'll list but not elaborate too much on them:

Advantages, Limitations of Silk Screen Process

1) You are not limited in size. The stencil is custom-built to take practically any size. If you wanted to print 15-feet sections in one piece, you can do so.

2) You are free to print on any type of material — metal, wood, cardboard, glass, plastic, cloth, etc. The paint will take on any material.

(Continued on page 50)

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3) You are not limited to any special thickness of printing stock. The material you print may be thick or thin, flimsy or firm, flexible or hard.

4) You can print with many different types of printing inks or paints—to name the more common media, oil colors, lacquers, enamels, ceramic paints, gold and silver paints, etc.

5) The paints you use may be opaque or transparent, dull or glossy, flexible or brittle. You have complete control over opacity, finish and flexibility of the paint. It is the best process by which to print a light color over a dark background. You can paint with a white opaque paint on a black background if you wish to.

6) For small runs, the silk screen process is very economical because of the low cost in making the stencil plates and the simplicity of the process itself.

There are two main limitations:

1) The silk screen process is not as good as some other processes for reproducing realistic art work in unlimited colors.

2) The process is expensive for larger runs. Where the effects strived for are the same for silk screen as for some other method, other printing methods which employ high-speed presses may be cheaper.

Materials That Can Be Silk Screened

You mention, among the advantages, the fact that one can silk-screen with many different types of paints. Can you screen other viscous substances such as varnish, glue or various industrial compounds such as asphalt?

Yes, you can print with practically any substance that has viscosity. I think we mentioned in last month's article some of the unique applications of the silk screen process. "Wires" which can conduct an electric current are stencilled with special metallic paint. Spots on cheap furs are stencilled with dyes which change the appearance of these inexpensive rabbit skins to leopard fur. A light etch compound is available for application on glass. The print is permanently frosted onto the glass with one sweep of the squeegee.

Can you print with some sort of compound to act as a mask for etching or sandblasting?

Theoretically, yes, but I do not know the formula of the composition. That would be a research problem for your chemist.

How permanent are the colors used in silk screen?

As permanent as they can be made. By that I mean that fugitive as well as fast color paints can be silk screened. The final result on the print will depend upon the type of paint you use. Generally speaking, the silk screen stencil process can give you more permanent colors because the stencil can be made to deposit a very appreciable layer of paint onto any surface. The thickness of the coat of paint is controlled by the mesh of the silk, type of rubber on the squeegee, etc. A heavy layer of opaque paint is more permanent than a microscopic film of transparent ink.

(Continued on page 52)

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Yes, Colors Can Be Matched Accurately

Can colors be closely matched?

With care, they can. Color matching is done visually and no color matching machines are used, although there is no reason why they couldn't be. At the present writing, there is an order in my shop for the silk-screening of a color chart with 50 colors. And they are not reds and blues and greens. The job is for a face powder company and all colors are flesh tones, really 50 different tones of the same color. They will be matched and proved and submitted for an OK before printing the job.

Do you usually take the precaution of pulling a proof before printing?

No, usually not. The seasoned buyer of silk screen printing knows that the original art work will be duplicated faithfully. The reason advance proofs are not too practical in silk screen work is because the same screen can be used for the entire job. Thus, the stencil is made, the first color is run off, the stencil is dissolved and the same screen is used again for a second color, etc. However, if you want to pay for having advance proofs, they can be had on this basis.

What do you do in case of a repeat order? Make the stencils over again?

Well, if a repeat order is expected, then the stencils are not washed out. They are preserved and stored for re-use.

How long can you keep the stencils?

For years, if properly cared for.

Does the price you pay for a silk screen job include the cost and possession of the stencil?

The price generally includes the cost of making the stencils but the screen remains the property of the silk screen house. The screen is a fixture or working tool and is not sold outright, unless the customer specifically asks for the screen and is willing to pay for it.

Is there a standard estimate scale by which you can figure what a screen job should cost?

No. Each job is figured individually. The price quoted to a customer will take into consideration the size and nature of the stock, the quantity of the run, the type of art work, the number of colors, etc. There are too many factors that have to be considered to make slide rule figuring practical.

We have heard that there is a standard estimate for silk screening of decals. Is that true?

That is possible because of some of the standard specifications of typical decal jobs. They are figured by number of printings, dimensions of printing surface and quantity.

Silk Screen Process Associations

Are there any associations or technical foundations in the silk screen industry similar to the various trade associations of the lithographic and photographic industries?

Silk screen is the most widespread printing process in all the graphic arts. So many different industries use the silk screen process that it would be difficult to collate and organize the hetero-

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geneous users of silk screen. Even the U. S. Bureau of the Census at Washington has no complete data on silk screen. It is part of the sign painting and poster field, the textile industry, the wallpaper printing industry, the toy and game industry, packaging, etc.

There have been scattered local associations of owners of silk screen shops but their main purpose for existence was to deal with common labor problems. However, about a year ago a national association with headquarters in Chicago was organized. It is called the Screen Process Printing Association, International (332 S. Michigan Ave., Chicago 4, Ill.). Its purpose is to promote the silk screen industry as a whole, and to service buyers, employers, employees and dealers in the silk screen field.

In New York there is a local association organized for practically the same purpose but concerned with the local scene of activity.

Where can I get literature and more information on silk screen?

As I said at the start of this article, if there are specific questions, address them to the Editor of INDUSTRIAL FINISHING. Your question will be answered either by mail or in one of a new series of articles published in this magazine. In the meantime I suggest that you browse through the following books:

"Silk Screen Printing Process" by Biegeleisen & Busenbark.
"Silk Screen as a Fine Art" by Biegleisen & Cohn.
"Silk Screen Production" by Harry L. Hiett.
"Silk Screen Process Reproduction" by Bert Zahn.

Order any of these books through INDUSTRIAL FINISHING Magazine.

Binks Appoints Salesmen

Binks Mfg. Co., (industrial spray finishing equipment and systems) 3116 Carroll Ave., Chicago 12, Ill., announces a number of appointments in its sales organization.

Mr. H. J. Fink has been appointed to direct sales and service in Colorado, Kansas, Nebraska, Wyoming, Montana and New Mexico, from headquarters at 346 Grant St., Longmont, Colo., a Denver suburb.

Mr. C. J. Rood has been made manager of the company's Branch office at 117 E. Michigan St., Indianapolis, Ind. He will direct sales and service in Indiana.

Mr. M. B. Scully will handle sales and service in northern Illinois and the state of Iowa, with headquarters at 1028 S. Euclid Ave., Princeton, Ill.

Mr. E. J. Cremer will be in charge of sales and service in southern Illinois and the state of Missouri, with offices at 705 Olive St., St. Louis, Mo.

Mr. B. R. Fulton will be in charge of Binks new and enlarged direct factory sales and service branch at 1231 W. Ninth St., Cleveland, Ohio, handling sales and service for Ohio.

Mr. J. J. Lynch, for many years a sales engineer with Binks, has organized the Bay State Spray Equipment Co., with offices and warehouses in Springfield and Boston. He will be in charge of all sales and service throughout the entire New England and greater Boston area. Headquarters in Springfield, Mass., are at 175 Walnut St., and in Boston at 116 Bedord.

Mr. Harvey J. Dueno has been appointed manager of the company's direct factory sales and service branch in Milwaukee, Wisconsin. His territory will include Wisconsin, peninsular Michigan, Minnesota, North Dakota and South Dakota. Headquarters will be 1123 N. Jackson St., Milwaukee, Wisc.

Chicago Market July 5-16 Mart's 25th Anniversary

The American Furniture Mart will celebrate the 25th anniversary of its opening at the Summer Market July 5 to 16, 1949.

A two-fold program will be launched, the first an institutional project, with Mart-wide displays showing progress through the quarter century, special decorations, and important luncheons, dinners and meetings that will give the event a World's Fair flavor. The second phase will be special designs and merchandising programs by manufacturers, to translate a record Summer attendance into record buying power.

More than 410 of the original 6687 buyers who attended the first Summer Market at the American Furniture Mart were in attendance at the 1949 Winter Market, and are expected to be present at the Anniversary showing.

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Fresh'nd-Aire Circulator
designed by Joseph Palma, Jr.

PRODUCT IMPROVEMENT THROUGH ATTRACTIVE *Design and Finish*

By Joseph Palma, Jr.
Palma-Knapp Associates

THE DESIGN of electric fans has, until very recently, followed a stereotyped pattern. There existed the elements of wire guard, fan blades and motor housing, and a cast of iron base. The guard was usually used in the natural metal color of the wire and the base was covered with a dark wrinkle finish to hide casting imperfections. Usually the only spot of bright color was on the name plate.

As long as manufacturers insisted on the same techniques, the designer was left with the choice of making decisions within this established pattern. Recently, however, a few manufacturers have enlarged their vision and given the designer a free hand; Fresh'nd-Aire Co. of Chicago, Ill., was one such manufacturer. *(To page 58)*

SIZE NO OBSTACLE for JENSEN Infra-Red Ovens

DEVELOPMENT by Jensen of huge infra-red ovens, specially designed to process finishes on big jobs, like the massive house trailer shown here, has been one of the most outstanding advances in the recent history of infra-red.

Size is no obstacle for Jensen. The efficient Jensen oven shown above bakes *all* exposed surfaces at *one time!*

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In Finishing Production . . . the Future Belongs To Men Who *Plan* For It!

How a Product Designer Begins a Project

Given such liberty, a designer begins to cast about in his imagination and in his research and study, for expressive forms, proper materials, satisfying colors and finishes. The desire is to develop a product that will perform its function and, insofar as possible, express that function in as simple and pure a treatment of the basic engineering, lines, mass, form, color and texture as possible; and, of course the result must be a successful, salesable product.

Generally speaking, it is a truism to say that the buying public assumes satisfactory performance of a product under a well known brand name. Name then, is not a factor in the buyer's choice of one well known respected brand name over another. Selection will then be made on the basis of impulse generated by eye-appeal, otherwise known as good style or design. It has been said by merchandising people that visual impressions are more important in the closing of a sale than the fine points of function.

Product Attractive in Form, Texture and Color

Most manufacturers know that a product dressed in a shabby coat, regardless of superior performance, will be outstripped by a product that looks like greater value and quality. A salesman is wise to present his best appearance—and the product's appearance is the best salesman for itself. The Fresh'n-Aire circulator is a product that helps to sell itself. Its appeal is the sum total of the new forms, materials and finishes which all combine in a design of quality.

The problem, as presented to this office, was to design an air circulator styled to fit into the modern home—one that could be used as a floor type circulator, table fan or window ventilator, and could be adjusted to move air horizontally or in any elevation, including vertical, without the usual lock screw, thumb latch or other similar adjusting device. The circulator must also be durable, not easily marred, easily cleaned, not readily upset, pleasant to touch and light in weight for convenient handling. And last but not least, the 12-in. model with a 3-speed switch would have to sell for less than $45.00.

Market for Product Influences Design

Our first approach to the problem was a study of the market toward which the design was to be pointed. Regardless of where one looks today, special emphasis is placed on fine furniture styling, and it is natural that the home maker will look for the same modern beauty and efficiency in a home circulator that she finds in her furniture and other products. The finish then, was to be determined with this as a prime consideration.

The decision to use a plastic base was determined by two factors—finish and form. To use metal would have been impractical because of the deep draw, or the need for assembly of two halves with a resultant seam down the middle. The mottled mahogany phenolic base, on the other hand, gave us a

(Continued on page 60)

a TOUSEY *Exclusive!*

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FULTON SUN SHIELD

When the Fulton Company, manufacturers of automotive equipment, wanted a special protective coating for their famous Sun Shield, they turned to Tousey Varnish Co. As a result, the Tousey Special Product Department developed an all-purpose weather and abrasive resistant finish on the underside of the shield, and, at the same time, a primer for any type of topcoat. It is typical of the many special finishing problems which Tousey is solving for all types of industry.

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natural beautiful finish, plus these merits:

1) It can be molded in a limited number of colors, or coated to obtain any color desired.

2) It is pleasant to touch.

3) It is not affected by household cleaning agents.

4) It is moisture resistant.

5) It is dimensionally stable.

6) It resists combustion.

Mechanical Details and Utility Requirements

This sturdy cabinet-type base also acts as a cradle for the circulator housing which is mounted to swing around a horizontal axis, and permits finger-tip adjustment for directional control. The perforated sheet metal ring, which supports the front and rear guards, is pivoted on two horizontally opposed spring loaded fulcrums. The ring is also perforated for free flow of air. This is important, according to Fresh'nd-Aire engineers, because it not only allows more efficient operation, but reduces propeller noise as well. This is extremely desirable when used as a window ventilator at night.

Cellulose acetate butyrate was selected for the front guard and motor cowling because of its following merits:

1) It has unlimited color possibilities.

2) Is color fast with a permanent luster.

3) Has a surface pleasant to the touch.

4) Is not affected by household cleaning fluids.

5) Is moisture resistant.

6) Resists combustion.

7) Has high tensile strength and is dimensionally stable.

8) Is light weight.

9) Has a high impact strength.

The rear guard, made of formed wire, supports the motor bracket.

The motor cowling was designed to blend with the clean fresh design of the entire unit, and efficiently directs the flow of air through the motor for cooling. It is also injected molded of cellulose acetate butyrate.

Color, Texture, Finish are Factors of Importance

The entire circulator assembly is finished in a tan color—the front guard and motor cowling in natural tan plastic color, and the metal rim is enameled to match. Perhaps one of the least conspicuous and yet amazing achievements of this assembly, is the homogeniety of the unit, although made of different materials. Of course this is achieved by the careful matching of color for metal parts and the harmonizing of finished texture as well. The coated metal has the feel of plastic.

The metal propeller, propeller cowling ring and wire rear guard are finished with lustrous enamel of the same color as the plastic front guard.

The finished circulator is a 2-tone product in shades of tan and brown, and the whole unit has the smooth pleasant feel of plastic. The texture and color of this product make it a natural for home use. It is also desirable because in final finish it has no rough edges, no protruding screw threads or projections which could cause injury or mar other furniture. *(To p. 64)*

Finishing SYSTEMS

for ENAMEL • LACQUER • PAINT • VARNISH

. . . A Better Finish Will Step-Up YOUR Sales!

No matter what your product is—no matter what type of finish you put on it, a better finish immediately steps up sales. A better finish can only be obtained today by modern methods and modern equipment . . . equipment that is planned, engineered and properly coordinated to turn YOUR particular product out with the finest finish obtainable. You cannot afford to place the responsibility for equipment of this type, which so directly affects the saleability of your product, in the hands of any but those best qualified . . . that is why so many leading manufacturers in the automotive and household appliance fields—where eye appeal is imperative—turn to Mahon for complete finishing systems . . . they know that Mahon has pioneered development in this highly specialized field for twenty-eight years. This experience, which is world-wide in scope and covers virtually every industry where finishing is a major production operation, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere . . . you, therefore, get better planning, better engineering, and a better and more economical job of finishing, with modern Mahon equipment. See Sweet's Mechanical Industries File for complete information.

THE R. C. MAHON COMPANY

HOME OFFICE and PLANT, Detroit 11, Mich. . WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems including: Metal Cleaning Machines, Rust Proofing Machines, Dry-off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Units, and Drying and Baking Ovens. Also Paint Sludge Reclaiming Units, Hydro-Foam Dust Collectors, and many other Units of Special Production Equipment.

AHON

Product Is Versatile, Safe and Attractive

It is a circulator well adapted for use in various places—on the floor, on the table or on the window sill for night cooling. The base is low and sufficiently wide, giving it stability under all circumstances. It can not be easily knocked over should any member of the family accidentally bump it. It is also light weight to facilitate handling from place to place.

Thus we feel that the design has achieved the objective of combining the complete versatility of three fans—table, floor and window units—in a single air circulator. Likewise, the selection of material, colors, durable finishes, and clean style will satisfy the potential buyer in every respect.

Editor's Note: Joseph Palma, Jr., author of this article, began his designing career with the Century of Progress in 1932, designing exhibits, after receiving a degree in Architecture from Illinois Institute of Technology. Later he took a job as product designer with Montgomery Ward and acted as chief designer.

In 1937, he left to serve concerns as a free-lance designer. During the war he was a research engineer at the Forest Products Laboratory, studying plywood for aircraft. At the present time, in addition to his design activities, Mr. Palma also serves as critic of the senior class in Product Design at the Chicago Art Institute.

Recently, Mr. J. Gordon Knapp, a mechnical engineer, became associated with Mr. Palma to broaden the scope of service. Palma-Knapp Associates maintain an office at 185 N. Wabash Ave., Chicago 1, Ill.

Holding Light Work

SOMETIMES pieces for spraying are so light that air from the spray gun blows them out of place. One easy way to secure them is to use masking tape. Cut the required lengths of tape and lay them with the adhesive side up on a tray or panel. These tapes are secured at both ends with a short length of the same size tape, turned adhesive side down. The light parts to be sprayed are then placed on the upturned adhesive. When long lengths of tape are used it may be necessary to secure the tape at intervals along its mid length. This is also a good way to hold any work that must not shift its position while being sprayed.—GEORGE A. CONRAD.

Trouble, More Trouble and the Solution

EVERYTHING went sour; 80% rejects; an hour later only 10%; then 50% and so it went. Of course, it was blamed on the white synthetic enamel.

All day our service-salesman stayed with them to solve the problem without success. A rush request brought two trouble men to their plant at 7 P.M. to work with the night shift. Further trials brought out at midnight a definite admission by the plant manager that the trouble was not in the enamel.

There remained the question of "How to overcome the difficulty?"

A few days later, all was well. Parts came through nicely and there was no trouble. A week later, back came the old difficulty. Another recheck; again the enamel not at fault.

Cleaning with this and with that did not help, so there followed some intensive conferences of plant men, paint men, parts maker and cleaning

is your problem **HARD** *or* **SOFT ?**

Smart, new ideas in product design often present new problems in the application of technical coatings. The material to be finished may be either hard or soft; but a specific finish formulation is usually called for, because there is no universal finish that will meet all the requirements for every application.

The experience of our laboratories in the development of decorative and functional finishes for products of metal, wood, rubber, plastics, textiles, etc., has been widely acknowledged by product designers and production engineers.

You can get extra eye-appeal and longer life for your product with a prescription finish having properties that will withstand fabricating and retain their beauty and utility under constant use.

If you are working on a new product or looking for better finishes for your present product, let us help tackle your problem. There is no obligation. Write today.

℞ TOUGH JOB HEADQUARTERS
Prescription Finishes
Give us your coating problem. We guarantee you an answer based on your conditions, and not just a standardized formula.

THE WATSON-STANDARD CO.
Manufacturers of
PAINTS • VARNISHES • INDUSTRIAL FINISHES AND LITHOGRAPH COATINGS

FACTORY AND GENERAL OFFICES: PITTSBURGH, PA.
WAREHOUSES: BOSTON, BUFFALO, DETROIT, NEW YORK

solution men; then more tests by trial and error. Finallly came to light the fact that all parts which had been cleaned with one particular solvent, their original cleaner (a change had been made and not mentioned to us) came out perfectly.

Here at last was the solution of the trouble. Now things are running steadily with their old reliable cleaning solution in the vapor degreaser.

This is a good illustration of the need of cooperation of all interested, of digging deep and determining by process of elimination what elements are not a fault and finding what does solve the problem.

Naturally, we at Hilo were pleased that we took our full part in the combined effort and that our white synthetic enamel continues to perform with its good record intact.—Hilo Varnish Corp.

210 Wyandotte Representatives Hold 4-Day Conference

The 210 field representatives of The J. B. Ford Division of Wyandotte Chemicals Corp., Wyandotte, Mich., attended a general sales conference, February 21-25 at the Detroit Statler. Highlight of the meetings was a series of night "round table" discussions sponsored by the sales, technical service and research departments in which three separate audiences participated in more than three hours of discussion and demonstration, following regular day sessions.

On the opening day the Wyandotte men took a 4-mile tour of five of the Company's ten production units at Wyandotte, Mich.; inspected four of the Company's lake freighters and spent considerable time visiting the Wyandotte research laboratories, pilot plant and specially prepared scientific displays.

Carter B. Robinson, vice president of the J. B. Ford Division, key-noted the meetings by stating:

"For 50 years the salesmen of the J. B. Ford Division have set the pattern in selling and servicing specialized alkalies and cleaners through both good times and bad. As I see it, considering all factors available, we have every reason to believe that 1949 will be a big year in business. To be increasingly successful in selling, a man should be possessed of four attributes. I call them the four "ations"—information, discrimination, inspiration and determination."

The Wyandotte conferences were addressed by nine of the corporation's top officials including E. M. Ford, president, who was the featured speaker at the banquet which was attended by nearly 300.

Grand Rapids Varnish Appoints Lindemulder

Dr. George E. Lindemulder has been appointed to head the resin and varnish research activities of the Grand Rapids Varnish Corp. Since receiving a Ph.D. degree from the University of Michigan in 1934, Dr. Lindemulder has held responsible research positions with three nationally known manufacturers of industrial finishes. His work has been in the field of synthetic resins, varnishes and related products.

The 210 field representatives of the J. B. Ford Division of Wyandotte Chemicals Corp., with their home office executives during a 4-day convention recently held at the Detroit Statler.

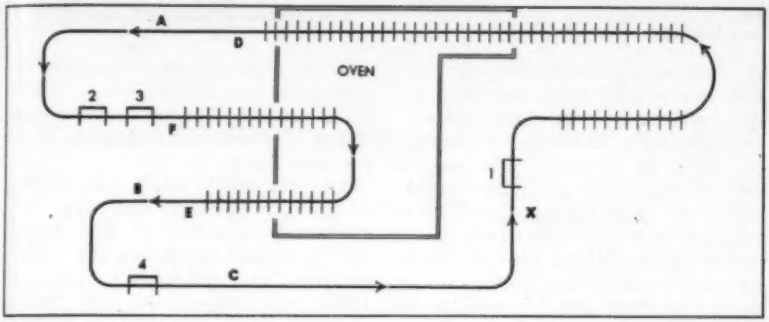


Fig. 1—Floor plan of conveyor, oven and spray booths. Spray booths are marked 1, 2, 3 and 4. In addition there are work stations A, B and C. At points marked D and F, the pallets are automatically turned from crosswise (close pack) to lengthwise position on the conveyor. At or near point F, pallets are automatically turned from lengthwise to crosswise position on the conveyor. In spray booths they are easily turned manually.

Cycles on Conveyor

conveyor. For reasons of cleanliness, each pallet is covered, top and bottom, with a peelable plastic film. Driving centers on the power chain are spaced 9-ft. 4-in. apart. The chain is powered by a 1½-hp. motor through a variable-speed drive.

The drawing marked Fig. 1 shows a plan of the conveyor, ovens and spray booths. Notice that in this drawing some lengths of the conveyor (four, in fact) have short cross marks. Along these lengths the conveyor chain drops to a slight-

(Continued on page 72)

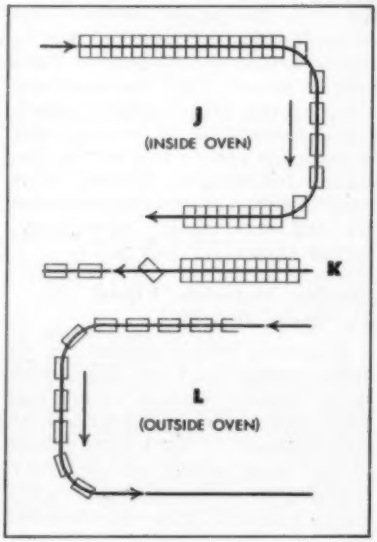


Fig. 2—Larger views of three different sections on the conveyor.

Section J shows two turns inside the oven, where pallets are "close packed" except at the turns.

Section K shows just one point where pallets are turned from crosswise to lengthwise position on the conveyor.

Section L shows two turns outside the oven, where pallets continue to travel in lengthwise position.

ly lower level in order to purposely disengage itself from the pins under pallets. Along these "dead" sections (for drying and cooling of work in process) the pallets are automatically positioned crosswise and close together and as a result they move more slowly; they move forward 40-in. (the width of one pallet) each time another pallet moves in from the live section of the conveyor. We refer to these sections as "close pack".

Now to explain the reason for turning pallets from a lengthwise to a crosswise position or vice versa: *In order to obtain a controlled reduced speed on the conveyor for flowout time and for force drying in the oven, all pallets proceed over the "close pack" sections in crosswise position.*

Referring to the drawing marked Fig. 2, you will notice that inside the oven the pallets naturally assume the desired position due to the layout of the conveyor. However, at certain other stations along the conveyor, pivot wheels or directional casters aid in mechanically turning the pallets into correct position—for instance, leaving "close pack" sections in two places (*D* and *E*) and entering a "close pack" section in one. (*F* in Fig. 1).

Coating Materials Piped To Spray Booths

A central supply system serves spray booths No. 1 and No. 2 with gloss lacquer, lacquer sealer and wash coat material. These finishing materials are pumped from drums located in an outside storage building to two 60-gallon and two 30-gallon pressure tanks on our second floor finishing room. A system of piping carries the materials to the spray booths. Stains and various colors of enamel are sprayed from pressure tanks or cups.

To completely finish 150 pieces of furniture every two days we operate this conveyor at a speed of 4½-ft. per minute in the "live" sections; this produces a speed of 17-in. per minute in the "close pack" sections. At this speed each complete cycle requires three hours and 48 minutes. For cycle No. 1, a maximum of ten men are employed on the conveyor; for cycle No. 2, one man; for cycle No. 3, six men; and for cycle No. 4, three men—making an average over the four cycles of 5.3 men. When workers are not busy on the conveyor they do hand and machine rubbing on finished furniture.

Finishing Operations on The First Cycle

Referring to the drawing marked Fig. 1, the work stations are at spray booths 1, 2, 3 and 4, and along areas marked *A*, *B*, and *C*. The operator who sprays NGR stain in booth No. 1 on the first cycle also sprays shading stain in booth No. 2 on the second cycle. On the third cycle this same individual sprays the sealer coat in booth No. 2; and on the fourth cycle he sprays a coat of lacquer on furniture as it passes through booth No. 2. Spray booth No. 3 is used chiefly for coating drawer interiors—and for applying enamel to painted drawer fronts.

Furniture is placed on the moving pallets just inside the finishing room door (*X*, Fig. 1). In spray

SAVE *Time* AND *Labor* WITH PRINTEX VARNISH

Combines the working properties of Lacquer and Varnish

Now you can have, in one product, the important working properties of both a lacquer and a varnish. Printex is the result of long and exacting research at the Reliance laboratories . . . proved in large scale production for more than a year.

Look at these outstanding Printex features. We'll gladly send you additional information without obligation.

Varnish solids—lacquer speed.

One coat has build-up of two lacquer coats.

Sets out of dust in 15 minutes.

Air dries to rub or pack in 16 hours.

Force dries in 1½ hours at 125°-140° F.

Can be rubbed as soon as cool.

Clear, transparent—no blushing or blooming.

Withstands pressure packing—2 lbs. to square inch.

Water and alcohol resistant.

Sprays easily, smoothly and quickly.

Does not settle in package.

Supplied in gloss or dull lusters.

For additional information address
4732 Crittenden Dr., Louisville, Ky.

Rely on Reliance

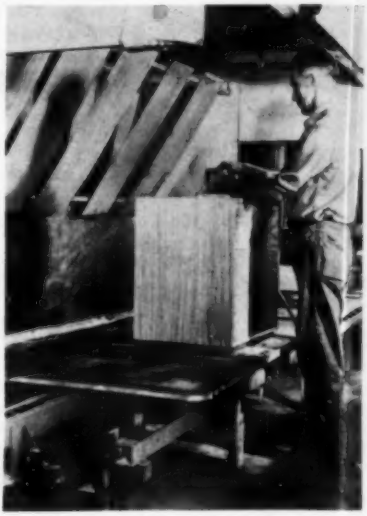
RELIANCE VARNISH CO.
INCORPORATED
Louisville, Ky. • Chicago, Ill. • Brooklyn, N. Y.

booth No. 1 an NGR stain is sprayed, using an atomizing pressure of 80-lbs. and a fluid pressure of 14-lbs. A time period of approximately 20 minutes elapses between spray booth No. 1 and the oven, to permit proper flow-out or flash (air drying) time for subsequent coats in the fourth cycle.

The stain coat is force dried for 59 minutes at a temperature of 133° F. and a relative humidity of 35%. Both heat and humidity inside the oven are automatically controlled. Visible recorders, located on the outside wall of the oven, make a permanent record of oven conditions around the clock.

Upon leaving the oven, the loaded pallets are automatically turned from a crosswise to a lengthwise position to travel for 18 minutes (cooling time) to spray booth No. 2. Here the pieces of furniture are sprayed with a lacquer-base wash coat containing 9% solids, using an atomizing pressure of 55-lbs. and a fluid pressure of 20-lbs. This wash coat is allowed a flash (air drying) period of ten minutes as the pieces travel toward the oven. Spray booth No. 3 is a comparatively small booth and is used for coating drawer interiors on this cycle and for painting drawer fronts on subsequent cycles.

Pallets are automatically turned to crosswise position as they enter the "close pack" section of the conveyor. The period of oven drying is 81 minutes. The same temperature and same humidity mentioned previously prevail for all coats on all cycles. The two time periods of 59 minutes and 81 minutes also prevail for all cycles.



Using a portable machine to wet sand the top of a chest in booth No. 4. Only tops are wet sanded. Photograph, courtesy Geo. Koch Sons, Inc.

As loaded pallets leave the oven they are again mechanically turned to a lengthwise position to travel for 22 minutes to allow furniture surfaces to cool. During this period of travel, the wash coated surfaces are scuff sanded and wiped before they enter spray booth No. 4 where an oil-base filler is sprayed at an atomizing pressure of 60-lbs. and a fluid pressure of 10-lbs. About five minutes time elapses before the filled pieces reach the first padding-in and wiping station (*C*, as indicated in Fig. 1). Along this line three operators pad-in filler and wipe; two others do the final wiping, cleaning up and inspecting. This completes the first cycle or "go around." *(To p. 76)*

Paid For Itself Within a Few Weeks

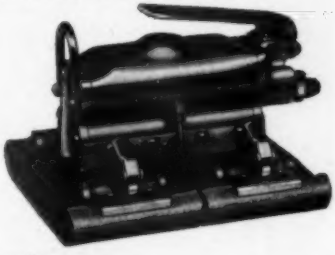
Sundstrand Portable Pneumatic Sander Saves $13.50 Per Day

Read what one prominent automobile manufacturer says about this Sundstrand Sander:

"We are using two machines for a final touch-up metal finishing operation of the body prior to painting. These machines are in use 8 hours per day, 5 days per week. We estimate that the cost savings over hand-sanding method on this operation is $27.00 per day. We have found through our experience with the sanding machines that the quality of the work is considerably improved over the hand-sanding method."

Savings like these are typical of the reports we receive from users in both the metalworking and woodworking fields. If you are interested in doing a *better job* at a *savings,* investigate the possibilities of the Sundstrand pneumatic sander . . . . . it's a portable *machine,* not a gadget.

Here's Why You'll Get a Better Job With a Sundstrand Sander



Pads on this outstanding sander reciprocate in a straight line and in opposite directions. Vibration is thereby reduced and operator's fatigue minimized. Elimination of end thrust makes it easy for operator to guide machine freely.

FREE! HELPFUL SANDING DATA

If your work includes sanding of wood, metal or composition, on production or maintenance work, write for free cpmplete bulletins. Ask for bulletin 1F-40.

SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC MACHINE DIVISION
ROCKFORD, ILLINOIS, U.S.A.

Cycle No. 2 Places Emphasis on Drying

Remaining on the same pallets the pieces of furniture which have been filled, padded-in and wiped pass through spray booth No. 1 (no operation this time), over the 20-minute travel time, through the oven for 59 minutes, and the subsequent cooling time of 18 minutes, until they reach spray booth No. 2 where an NGR shading stain is applied. Then follows the 10-minute travel time to the oven, 81 minutes in the oven, and finally air drying time to the end of the cycle. Truly this cycle allows a thorough drying of the foundation coats, a prerequisite of a quality finish on wood.

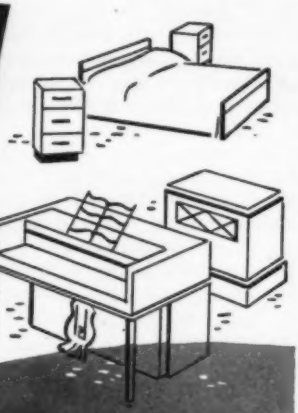
Sealer Coats Put on During Third Cycle

Beginning the third cycle, pallets of furniture enter spray booth No. 1 where the first lacquer-base sealer coat is applied. This is a 22% solids material of B viscosity (Gardner-Holt scale). A travel time of 20 minutes and oven time of 59 minutes follow. At the exit end of the oven, just after pieces have left the "close pack" section of the conveyor, all tops and any drawer fronts intended for a painted finish are dry sanded, wiped and tack ragged.

In spray booth No.2 all tops are given a second lacquer-base sealer coat—the same as that used for the first sealer coat. *(Cont. on p. 78)*

One of the pieces of furniture designed and made by Herman Miller Furniture Co.

USE HIGH SOLIDS CLEAR LACQUERS *by* O'Neil Duro FOR



UNUSUAL WORKABILITY

●

LOW MILEAGE COST

●

EXCEPTIONAL COLD CHECK RESISTANCE

●

LASTING BEAUTY

●

Write for complete information and sample panel.

High Solids Clear Lacquers by O'Neil Duro have solved many a production problem. Furniture, desk, radio cabinet, piano manufacturers — ad infinitum — choose these lacquers for their workability — lower mileage cost for the same film thickness as compared with the best low solids lacquers. Many of these manufacturers use one coat because it does the work of two.

High Solids Clear Lacquers are obtainable in all degrees of sheen — high gloss — semi-gloss — rubbed effect — satin — flat. They can be formulated to fill the need of the job.

Manufacturers of Enamels and Lacquers for over 50 years.

SYN-POR DURO FINISH

O'NEIL DURO COMPANY

MILWAUKEE 7, WISCONSIN

Any drawer fronts that take a painted finish are coated in spray booth No. 3. Then follows the flow-out time of ten minutes, 81 minutes in the oven, and a cooling period of 22 minutes before the pieces reach spray booth No. 4. Here all tops are wet sanded, using a portable sander with No. 5/0 wet-or-dry sandpaper, and naphtha as a wetting agent. Just beyond this booth two operators dry sand the remaining surfaces of each piece, wipe off, tack rag and inspect as cycle No. 3 ends.

Final Lacquer Coats During Fourth Cycle

As pieces of furniture enter spray booth No. 1 on their fourth and last cycle, they are given their first coat of gloss lacquer of 21% solids, viscosity *A* by the Gardner-Holt scale. For spraying this coat the atomizing pressure is 55-lbs. and the fluid pressure is 18-lbs. This coat is allowed to flash dry for 20 minutes. Incidentally this is the reason for the section of "close pack" in the conveyor line between spray booth No. 1 and the oven.

The first coat of gloss lacquer is force dried 59 minutes, followed by a cooling period of 18 minutes. Then the pieces enter spray booth No. 2 where the second coat of gloss lacquer is sprayed. This is the same as the first coat. Then follows a flash drying time of ten minutes, force drying for 81 minutes, and cooling time of about 30 minutes, until pieces arrive at the unloading station. This drying and cooling ends the fourth and final cycle.

Rubbing is performed off the conveyor. Portable reciprocating machines are used. The abrasive is No. 320 wet-or-dry sandpaper over felt pads, supplemented by 3-M rubbing compound and oleum spirits as a wetting agent.

The result is an excellent enduring finish, one that is stable and looks good after it is rubbed down. It is a finish that is leisurely applied and thoroughly dried after each coat, yet it is economical because of the rhythm of continuous controlled production and the possible diversification of operators.

Author's Note: This conveyor is patented.

Rudd-Murray Corp. Sold to Reliance Varnish Co.

The Rudd-Murray Lacquer Corp., of Asheville, N. C., has sold its business to the Reliance Varnish Co. of Louisville, Kentucky. The new owners have set up a subsidiary under the name Reliance Varnish Co. of N. C., Inc., to continue the affairs of the Rudd-Murray Lacquer Corp.

J. F. Rudd, President of the old corporation, is staying on for a limited time to train the new technical staff. Carleton C. Murray will continue with the new corporation as President, and will devote most of his time looking after the sales.

J. F. Rudd is leaving for Winter Park, Florida, early in April for a long vacation, and expects to make his home there. It is his intention, eventually, to establish a paint plant in or near Orlando to service the Florida trade.

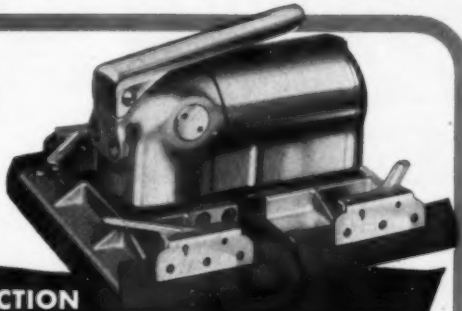
Product Designers Promote Three, Change Firm Name

J. O. Reinecke & Associates, 720 No. Michigan Ave., Chicago, Ill., is the new name of this firm of industrial products designers. Design service is offered on all types of products from automobiles to furniture.

The three designers elevated to the position of associate, include Mr. John W. Hauser, Mr. G. Harold Hart, and Mr. Joseph A. Hill. Mr. Jack B. Knight, business director, also was appointed an associate.

National Air Sanders

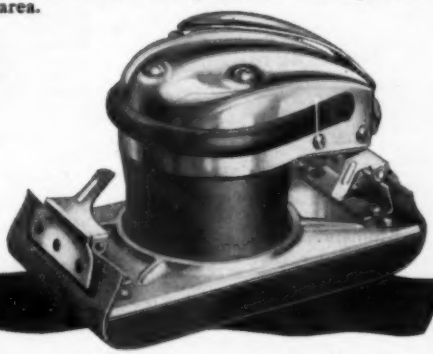
MODEL
300
Weighs 5½ lbs.



RECIPROCATING ACTION

For a perfect finish without swirls, circles, or gouges, use the straight-line, Model 300 National Air Sander. It will save time in filling, sealing and rubbing. Makes 2000 ¾"-strokes per pad per minute . . . requires 60 to 100 lbs. air pressure . . . has up to 50 sq. in. of abrasive area.

MODEL
400
Weighs 4 lbs.



ORBITAL ACTION

Even on small, narrow, and irregular pieces, the Model 400 will save time and energy and give you a much better finish. It is fast (up to 6000 r.p.m.) . . . has an abrasive area of 25 sq. in. . . . and is powerful and vibrationless. Write the factory for further details today.

Powerful . . . Vibrationless . . . Light-Weight

NATIONAL AIR SANDER, INC., Rockford, Ill.

Hammered-Effect Finishes

If I recall correctly I believe you recently published an article on Hammerloid finishes. The information covered both the one and two-coat systems of applications. Would you send me two copies of tear sheets on this article, provided they are available?—H.H.

An article entitled, "One Coat Hammered Finishes", by Johnny Nager of United Lacquer Mfg. Corp., appeared in July 1948 issue, pages 50 and 52. Tear sheets of this article are being sent to you.—ED.

Nail Hole Putty

Can you give us the name and address of a manufacturer of nail hole putty?—P. Mfg. Co.

An excellent one is advertised in this magazine. In a letter we are giving you the name and address of the manufacturer.—ED.

Stainless Steel Paint

I would appreciate your help in assisting me to locate an article, probably a new process item, which appeared in a magazine, possibly yours, last November or December. It was entitled, "Develop Stainless Steel Coating Easily Applicable to any Surface", and dealt with a method of spraying or brushing a coating of pure stainless steel on to any surface, using a special plastic base.

I am eager to find out the name and address of the manufacturer so that I can get full and complete information on this process.—C.F.C.

Perhaps you have in mind the article that appeared on pages 110 and 112 of December 1948 issue of INDUSTRIAL FINISHING Magazine. Tear sheets of this article are being sent you by letter. In these tear sheets you will find the name and address of one concern that can supply stainless steel paint. Another firm that can supply it is Charles Hardy, Inc., 420 Lexington Ave., New York 17, N.Y.—ED.

Finish for Wood Bowls

In the Questions and Answers of Dec. 1948 issue, page 92, there is an article giving information on a clear hard finish for wooden bowls. We are very much interested.

We would like to know where we could get more information and samples of the products recommended in this article, to get that clear finish. We think that you are in position to recommend the companies with whom we could get in touch regarding this.—B & S, Canada.

In a letter we are submitting names and addresses of some concerns that can supply the materials you want.—ED.

Pressure Sensitive Labels

Will you kindly send us the name and address of the firm manufacturing labels with pressure sensitive backing, as mentioned in Random Comment on page 4 of February issue?

We are interested in getting some of this type material, not necessarily labels, so if you happen to know of any other sources for this material, we will appreciate getting their names and addresses also.—V.P.M.

Names of several concerns making and selling this type of product are being sent to you.—ED.

Metal Filler

I would very much appreciate it if you could give me the address of The Savogran Co., which was mentioned in February issue, in the "Letters from Readers" column, as being the manufacturer of a metal filler to cover spot weld indentations on metal cabinets.—St. C. Mfg. Co.

It's 28 India Wharf, Boston Mass.

Temporary Peel-off Coatings

From time to time we have noticed various plastics and lacquer finishes advertised in INDUSTRIAL FINISHING. We refer to materials designed for either spray or dip, the end result of which is designed to protect either a chrome or painted finish against mars or scratches, in fabrication, handling, assembly or shipping.

We have an account in High Point, N. C., that has need for such a product. We

MEMO
For a rich, durable finish you can't beat . . .

RANDOLPH
ONE COAT BAKING
TEXTURE ENAMEL

(Available in wide range of colors)

These fine Randolph Texture finishes — known for their uniformity — can be used over rough castings, plain and polished metal — or on any surface that will stand baking.

No surface preparation required. These finishes will cover all imperfections.

The services of our skilled technicians are always available to help you get precisely the form and size of design that you require. Submit your problem. Without cost or obligation to you we will be glad to make recommendations.

Randolph
PRODUCTS COMPANY
Carlstadt, New Jersey

DOPES · LACQUERS · ENAMELS

would appreciate your contacting them direct and furnishing them with names of the various manufacturers that produce this material. Or, if you prefer, it will be quite satisfactory to send inquiries to the various producers of this material and have them contact this account direct.

In any event, we would like to see as much information as possible forwarded to Mr. C.R.W.—Y. Mfg. Co.

There are probably 20 to 30 of these on the market. In a letter to C.R.W., we are naming 14 of the manufacturers and their addresses.—ED.

Back Copies of I. F.

Do you still have available the 100 or so back copies of INDUSTRIAL FINISHING Magazine? If you do, will you notify me as to the shipping charges, and I'll be happy to send it to you, as mentioned in the Dec. 1948 issue of INDUSTRIAL FINISHING, page 86.

Note to Editor: I sent the above letter to Russell Davis, 1517 Lester St., Tuscon, Arizona, and my letter was returned, because of no such address.—J.J.W.

In checking back to the Russell Davis letter, we see that the street number should have been 2517 E. Lester St.—ED.

To Heat Sump Tank

We are faced with the problem of heating the sump tank for our flood booth to maintain our paint at a temperature of 65° to 75° F. Could you give me the names of any manufacturers who make an immersion type electric heater for such an application, which would pass fire regulations? Also are there any manufacturers making steam heaters for such an application? We would appreciate your comments on how to solve this problem.—C. E. Co.

In a letter we are naming a few manufacturers of electric immersion heaters, which may serve your purpose. Does any reader have a suggestion on this?—ED.

Engineer-Consultants for New Finishing Setup

One of our clients has a customer in Minneapolis, Minn., who is planning to go into the prefabricated housing business and wants to set up his production assembly and finishing operations on a conveyorized basis.

This problem was brought up at a meeting of salesmen last week and I suggested that the problem is one on which a qualified finishing consultant would be the most help in properly planning and laying out such a setup. I am wondering, therefore, if you can give me the names of two or three such men in or near Minneapolis whom you think would be able to help this company?—S.P.

Names of a few engineer-consultants no nearer than Chicago are being submitted by letter.—ED.

Coating for Soapstone Tops of Laboratory Tables

We are setting up a new laboratory and are having work benches covered with soapstone tops of the Alberene type. I understand that it is desirable to apply a finish before these are put into use so as to seal in the surface which is somewhat porous. Naturally these table tops will undergo severe service and the finish must be resistant to water, alkalies, acids and various chemicals, such as organic solvents. We do not wish the surface to become tacky or sticky under the action of solvents or other chemicals. —C.C.C.

In a letter we are naming some manufacturers of penetrating sealer compounds which we believe may serve your purpose —although perhaps they may not be as resistant to chemicals as you desire.—ED.

Automatic Spray Equipment

Reference is made to an item under the above title in "Letters from Readers", on page 82 of Feb. 1949 issue. We would appreciate receiving full address of R.C. Ltd. of West Bromwich, England, as our automatic electric spray-bake conveyor equipment is a "natural" for this type of work.—The Capitol Machine Co.

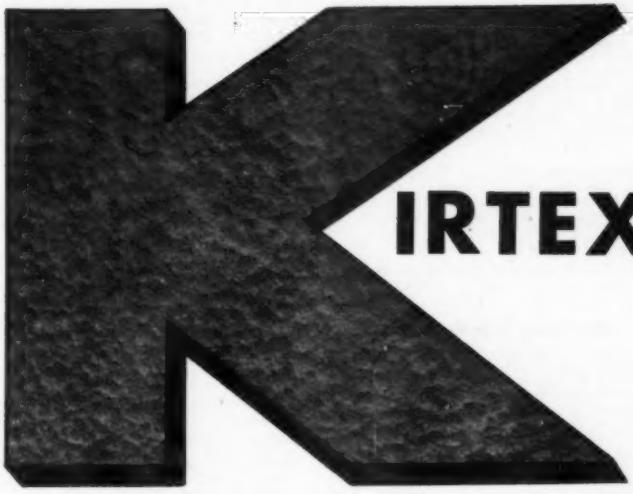
We notice on page 82 of Feb. issue of INDUSTRIAL FINISHING that an English firm requests information concerning an automatic machine for spraying lipstick cases, etc. We make such a machine and would appreciate it if you would furnish us with their name and address.—Progressive Equipment Co.

Painting Electric Heaters

Will you kindly let us know if it is possible to still obtain reprints of the article, "Set Up for Painting Electric Heaters", which appears in Feb. 1949 issue? We would like to have copies of this article for distribution to our heater agents.—Swanson Tool & Machine Products, Inc.

Reprints of articles cost money and occupy space, so we do not make any unless someone orders enough (several hundred or thousand) to justify a setup

A Distinctive **DECORATIVE** *Finish*



KIRTEX ONE COAT HAMMERED TEXTURE FINISH

For eye appeal and sales appeal there is no finish more attractive than KIRTEX. It is easy to apply, foolproof and extremely durable.

Available in a wide variety of beautiful colors, shades and tones. Sample panels finished to meet your particular color specification will be sent on request.

KIRCO Modern Coatings are delivering trouble free performance to prominent manufacturers of metal, wood, plastic and glass products.

KIRCO — Kirker CHEMICAL COMPANY

ONE EAST ELEVENTH STREET • PATERSON 4, NEW JERSEY

and press run. However, we happen to have a few extra copies of Feb. issue of the magazine, and are sending them to you.—ED.

Can Supply Metallic Finishes

On page 78 of March issue we notice that one of your readers is interested in information regarding metallic finishes. Would you be good enough to send us the name and address of "W. R. Sons" so that we may send them our technical literature and Metallic Color Cards?—Maas & Waldstein Co.

Inasmuch as this is "right up our alley", we would appreciate it if you would let us know the name and address of the concern looking for metallic finishes, so that we can contact them.—Edward C. Ballou Co.

Name and address furnished.—ED.

Enameling Zipper Chains

We are designing an automatic machine for enameling zipper chains and wondered if you ever published an article on this subject in your valuable magazine. If you have, we would greatly appreciate a copy of it; also, any information with regard to the source of enamels and machinery suitable for this purpose.—E. Zipper Co.

A Question and Answer on this subject appeared in May 1948 issue, pages 100 and 102. Tear sheets of this article are being sent to you.—ED.

Roller Coating Machines

We would appreciate it if you will send us the names and addresses of some manufacturers of roller coating machines.

Thank you in advance for this favor and also for the past assistance you have rendered us. You may be sure that we will mention the name of your magazine when writing these companies.—V. M. Products Co.

Names and addresses of several are being sent you in a letter.—ED.

Can Supply Glass Finishes

In the March issue, page 80, we notice that "R. Lamp Co." is seeking information regarding "finishes for use on glass". For many years we have been supplying the glass industry with air-drying finishes which produce an attractive crystallizing effect, known as our "Prismlac". In addition to Prismlac we have several other special products which are sold to the lamp industry, such as resists that are used on glass globes and torchieres.

Would you be good enough to send us the full name and address of "R. Lamp Co.", so that we may contact them about Prismlac?—Maas & Waldstein Co.

We manufacture a material for glass and would appreciate your furnishing us the address of this company in order that we can contact them.—Sterling Lacquer Mfg. Co.

Name and address supplied.—ED.

Two-Tone Finish Gun

Can you advise us how to obtain a spray gun for spraying the two-tone finish described in the article on page 48 in August 1948 issue of INDUSTRIAL FINISHING?—X. Co.

You may have to take up this request with The Sherwin-Williams Co.'s Industrial Division, as this is the gun furnished for spraying S-W's "Dimenso" finish, see Jan. 1949 issue, pages 10 and 11. —ED.

Wood Graining

We manufacture all types of wood products such as furniture, silverware chests, jewelry chests, etc., and would appreciate any information and subsequent literature you may be able to send concerning the various methods of simulating wood grains, and which of the processes you recommend.—M.R.R.

In a letter we are naming several concerns who manufacture or supply equipment and supplies for wood graining.—ED.

Toilet Seat Coating

We take the liberty of writing to you to ask if you can give us some information about an American plastic paint "vulcanized", which is used for dipping of W.C. seats. The appearance is as white enamel, and the paint is absolutely waterproof.—A. N. & S., Malmo, Sweden.

We are not sure who supplies this material. Will some reader please tell us?—ED.

I. F. Article Wanted

We are having a new water-wash paint spraying system installed in our garage and your article, "Avoid Wasting Material by Using Correct Spray Set-up", published in April 1942 issue of INDUSTRIAL FINISHING has been called to our attention as being unusually clear and complete. If this article is available to us, would you kindly advise us the cost of same?—R. I. Co.

Random Comment on the Industrial Scene

(Continued from page 6)

These are necessarily days of economies, and this seems like a sensible solution to cleanliness which is so necessary to effective manufacturing processes.

* * *

New Furniture "Wood". At a recent showing of low cost furniture at the Museum of Modern Art in Chicago, a new type of armchair was exhibited. It was made of wood pulp impregnated with resins, molded and cured under heat and pressure. It has no joints. This, it is said, is only one of many possibilities for this new "wood" in furniture making. Colors may be added to produce any desired shade.

Of course this type of furniture has its limitations in that no actual wood grain is present. Upon completion it has the appearance of slightly glossy, hardened cowhide leather. It should be especially suitable for painted furniture or for the undercarriages of upholstered furniture.

* * *

New Color Fluorescent Lamp, called Vis-A-Ray is available in 20- and 40-watt sizes. The manufacturers recommend it for drafting rooms, minute assembly operations, machine shops and textile plants where greater detail perception and color detection are required.

These lamps should prove valuable in the finishing room in stain and shading booths, and for burn-in and other repair operations. Inspection might also be included.

* * *

New Antique Finish. At a recent showing of custom made furniture in New York some dramatic tables were exhibited with a new finish. An acid and coloring is applied to a strongly grained wood such as oak or rock fir; as a result the softer parts of the wood are eaten away slightly while the grain turns dark brown and stands out prominently. Protective top coats are heavily rubbed to eliminate gloss. The process lends a worn, antique appearance to the surfaces so treated.

* * *

Chairs For Workers, with the back rest fixed to relieve fatigue, and with seat adjustable in height, are now available. Each person can adjust the seat height to suit individual needs simply by lifting. No screws, bolts or tools are required. These sturdy chairs may also be had with an adjustable foot rest. They are suitable for typists, assemblers, hand workers and inspectors.

Correct seating in industry is not a luxury. It relieves strain and fatique. It promotes good workmanship and increases production.

Leonard Schaeffer, Chemist, Joins The Arco Co.

Appointment of Leonard Schaeffer as senior chemist in the products development laboratory at The Arco Co., paint manufacturer with plants in Cleveland, Ohio and Los Angeles, Calif., is announced.

Mr. Schaeffer, a graduate of the Polytechnic Institute of Brooklyn in chemistry, has been engaged in paint chemistry since 1937. Before joining The Arco Co., he was with concerns in Brooklyn, N. Y., Newark, N.J., and Baltimore, Md. He is a member of the American Chemical Society and served as a radio technician in the U. S. Navy.

Gillis Manager of Merrimac Division of Monsanto

Monsanto Chemical Co., announces the appointment of John L. Gillis as acting general manager of the company's Merrimac Division with headquarters in Boston, Mass. He was formerly in the company's foreign department at the St. Louis office.

Light-Fast Dyes in Light Colors

We use transparent dyes cut in alcohol and carried in lacquer. Heretofore, we have kept within the range of basic colors, but now there is considerable call for lighter, brighter colors.

We find that when light tints are produced, either by cutting one basic color or combined part quantities of basic colors, there is a tremendously accelerated fading tendency.

Will appreciate your suggesting where we might get information regarding what can be done in securing fast light colors, bearing in mind that pigments cannot be included.—C.G.S.

If there is any solution to your problem, it would be in the archives of dye manufacturers rather than from paint manufacturers. If you have not already done so, I suggest you contact some of the major producers of soluble colors.

It might be possible that certain pigments could be included. Presumably your use of pigments has been limited because of their opacity, but I wish to call to your attention the fact that opacity is at least in part a funcion of particle size. It is possible to disperse certain pigments, such as phythalocyanine blues and greens and certain red organic toners, to such an extremly fine particle size that they are, to all intents and purposes, transparent. R-B-H Dispersions, Division of Interchemical Corp., exhibited a line of such transparent pigment colors at their booth at one of the Paint Shows several years ago. I do not know whether or not they manufacture such a line as a standard product, but if the volume were worthwhile, they could probably be induced to do so.—B.P.

With regard to the use of alcohol-soluble dyes in lacquer, it is true that most of these materials are fugitive, except when used in low dye concentrations. There is an expensive class of dyestuffs which is considerably more light-fast than the materials commonly used. These are the dyes typified by the Luxol colors manufactured by DuPont. Although they are not as clean or as bright as the fugitive dyes, they are considerably more light-fast and may be suitable for your use.—M. A. GLASER.

The spirit-soluble dyes of the basic type have very poor light-fastness, particularly in light tints. There is a type of spirit-soluble dye which is much better than the basic type. These are known as fast spirit-soluble colors, and are rather expensive. Your supplier can furnish you with this type of dye. Some of the acid colors are spirit-soluble, and are utilized in non-grain-raising stains. The acid colors are the most light-fast of any dyes. Why not get a concentrated yellow, red, and black non-grain-raising stain and add to the lacquer as required. This will give you the utmost in light-fastness.

Although you undoubtedly have good reasons for not wanting to use

Lacquers

and a staff of finishing technicians

Stille-Young produces a wide variety of standard and special lacquers for manufacturers constantly seeking new ways to raise quality and lower costs.

These manufacturers have found the quality of Stille-Young lacquers high and unvarying. But often more important to them is the personal attention given their problems by Stille-Young's staff of finishing technicians.

Time and again, this staff has shown manufacturers how to save time, money and trouble in their finishing departments. This staff is always ready to tackle new problems . . . including yours.

The quality line manufactured by Stille-Young

S-Y TRADE MARK

STAINS • FILLERS • SEALERS • LACQUERS • ENAMELS • PAINTS

THE STILLE-YOUNG CORPORATION

Chicago 14

pigments, I might suggest that there are some transparent finely ground pigments which are indistinguishable from dyes as far as hiding power goes, but which have better lightfastness than the best dyes.—R. H. WAMPLER.

Is It a Bake or an Air Dry Enamel?

We are asked to analyze some paint that was bought without proper labels. Our problem is to determine whether the paint is synthetic alkyd resin air-drying or whether it is a synthetic baking enamel.

The purchaser of this paint bought it under the belief that it was a synthetic alkyd resin air-drying automobile paint. He wants to be certain that it is, before he starts to use it.

Could you tell us how we could test this paint to discover whether it is or is not an automobile paint of the synthetic alkyd resin air-drying type? We would deeply appreciate any information you might send us on this subject.—C. Research Co.

One simple test is to apply some of it in the way it would be used in production, to a sample metal panel—a fairly large panel preferably; allow the coating to air dry for eight to 12 hours and then see whether or not you have a hard film (hard clear through) that is tough and adheres properly to the metal.

If you get a hard, tough well-cured film on the panel, by air drying, it is evident that the material is an air-drying enamel. However, if the coating appears slightly spongy or not thoroughly hard just underneath the outer surface, it is likely that this is a bake enamel and must be baked to be cured properly. Some local commercial finisher could make this test for you very easily.

The other alternative is to send a sample of the material to a paint chemist — one who is familiar with both air-drying and bake enamels. He can make some tests which will disclose whether or not this is an air dry or bake enamel, and whether or not it is suitable for use as an automobile finish.—ED.

Your suggestions (given above) are substantially correct. However, the test which you have outlined for determining whether the material is an air-drying or a baking enamel will tell nothing about the suitability of this enamel for use on automobiles.

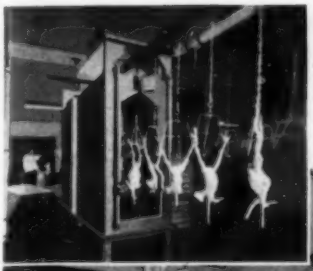
It sounds to me as if someone might have picked up a job-lot of a surplus material which might have been made for an industrial use other than automotive finishes. It may turn out to be brittle, have poor adhesion, and lack durability.

The only way to determine its suitability would be to make a complete vehicle analysis to determine the amount of phthalic anhydride present, and the amount and type of oil or fatty acid modification. Information on the nature of the pigments would also be helpful. From the inquiry, I gather that C. Research Co. is not familiar with this type of analysis. —P.B.O.

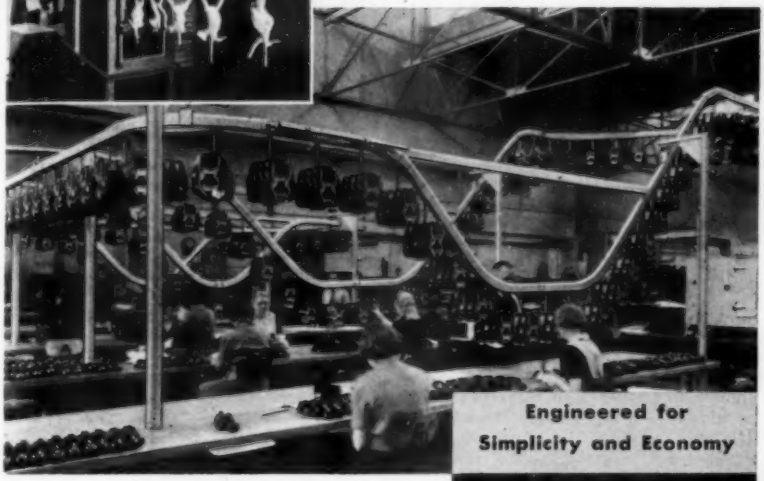
Finish for Bowling Pins

On page 94 of Feb. 1949 issue, "S.S." requests a material to use for refinishing used bowling pins. Here is what I have used on used pins over a period of ten years: After the pin has been sanded and cleaned with sandpaper and steelwool on a pin lathe, I spray the pins with two coats of white bowling pin enamel ZE-6-C, made by an advertiser in this magazine. (Name on request).

When sprayed with this material



Turkeys or Telephones...



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***For handling efficiency and economy recommend* R-W Power Conveyors**

Efficient, economical handling and movement of materials means lower production costs. Today, in all kinds of plants, Richards-Wilcox Conveying Equipment is solving this handling problem to perfection. The extreme flexibility of R-W ZIG-ZAG Conveyors makes them readily adaptable to the most complex plant layout.

1880 • Over 69 Years • 1949

- Horizontal and vertical wheel units alternate in a continuous chain traveling through special steel tubing.
- Complete flexibility for installation in any plant. Easily installed, easily changed to conform to plant alterations.
- SAFE—all moving parts fully enclosed.
- Low first costs. Low power factor.
- Load capacity: Single suspension 65 lbs. per foot—double suspension 125 lbs. per foot.
- Standard horizontal or vertical curves—two-foot radius. (Stock load pendants including automatic turning units available.)

Richards-Wilcox Mfg. Co.

"A HANDY ONE ANYWHERE YOU LOCATE"

AURORA, ILLINOIS, U.S.A.

Boston New York Chicago Philadelphia Cleveland Cincinnati Washington, D. C. Pittsburgh St. Louis New Orleans Des Moines Minneapolis Kansas City

the pins will have a new appearance and will take a terrific beating without any of the finish coming off. This material may be dipped also.—HARRY D. RICHMOND, Supt.

There are possibly many contributing factors that cause the blistering. I will go into a few of those which, to my way of thinking, would be troublesome, and will give suggestions to follow up for elimination of the existing condition.

Check the solvents used in your hot dip lacquer. Solvents used for this type of coating should not be water compatible, soluble or miscible; or the product should be as free from that type as possible. Alcohols would be the worst offenders, and so on down the line.

If baking facilities are available, I would suggest a low cure melamine sealer with a small percentage of short alkyd. This type sealer would insure a harder film, and possibly it would set soon enough to compress the air rather than permit it to expand and cause a bubble.

Another possibility would be a vinyl-type sealer.

Still another would be to heat the pins, as suggested in the article. However, they should be coated while still warmed to approximately the temperature of the lacquer, so that when the coating is applied, there would be contraction of pin and coating, and not a combination of the two in reverse.—A. P. LEHMANN.

Engineering Service Offered by Snell

Foster D. Snell, Inc. 29 W. 15th St., New York 11, N. Y., offers full engineering service in solving practical industrial problems and for research. Service includes full mechanical and chemical laboratory facilities. Services are available for single problems or for extended periods on a retainer basis.

Information About Shellac

Do you have any books or information on shellac? Bleaching of shellac, seedlac, kirclac, and cutting of shellac? What materials can be added to shellac that are soluble in alcohol? How to dewax shellac? Any information would be greatly appreciated.—B.G.J.

Shellac is cut in alcohol by a simple mechanical stirring, although it has peculiar behavior during even such a simple operation. The usual proportions are four or five pounds of shellac resin per gallon of denatured alcohol.

Many materials can be added to shellac that are soluble in alcohol and compatible with the resin. Rosin, Manila resin and many other alcohol-soluble resins can be used. Some grades of nitrocellulose are also compatible.

For further information, I suggest you write to Shellac Information Bureau, 70 Pine St., New York, N.Y.—R. H. WAMPLER.

Cleaning Steel for Aluminum Lacquer

Referring to a question under the above title, on page 88 of February 1949 issue of "INDUSTRIAL FINISHING", the "L. Mfg. Co." could easily solve its problem of poor adhesion by the addition of very small percentages of phosphoric acid.

A small percentage of shellac, added to the lacquer, may also be a means of helping "L. Mfg. Co." overcome the lack of adhesion.

Sometimes the surface toughness or mar-proofness of a film deceives the layman into the belief that a product has good adhesion, for example, on can coatings.

It is quite possible that in this

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STAINS • GLAZES
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NOVELTY FINISHES

IN STEP WITH THE TIMES

Industrial Finishes
that make the most of available raw materials to give you greatest durability, together with attractive appearance and economy.

• **FOR APPLICATION BY ALL METHODS**

JAMES B. DAY & CO., CHICAGO

instance this company has a hard steel that requires incorporation of an etching agent*, or a gummy tough resin to solve the problem on a one-coat system.—A. P. LEHMANN.

The question asked by "L. Mfg. Co." about "Cleaning Steel for Aluminum Lacquer" may be answered by the stock Houstonian's answer to a complaint about our summer weather: "It isn't the heat, it's the humidity that hurts."

When I noticed that the "L. Mfg. Co." is located in Florida it seems to me that their troubles might be due to moisture condensing on the stampings between the degreasing operation and the lacquering. Any moisture thus forming would tend to collect under the edges of any scale on the metal, and would then get in its work of loosening the coating after the finish had set. This could also be true, of course, of condensed vapor from the degreasing process, which would tend to collect, along with grease residue, under the scale on the surface of the stampings.

Both the stamping and deep-drawing processes tend to draw the surface of the metal more than the interior, and thus to form minute pockets or recesses which tend to trap lubricant and any solvent used in the attempt to render the finished stamping chemically clean. This roughness, while sometimes not apparent under unaided visual examination, will show up clearly with relatively slight magnification, and may be detected by wiping the metal—against the grain of the stamping—with a silk rag.

Admitting that the metal may not have been thoroughly cleaned by the degreasing process or, putting it in slightly different form, was not completely dried of the oily residue left in the roughness after cleaning, L. Mfg. Co. could try applying heat to the stampings before lacquering. An oven, such as is used for baking enamels, is not required. A relatively short battery of infra-red lamps will do the job, and will dry the deposits from the base of the recesses or roughness outwardly, insuring against there being any residue which will expand later and disrupt the coating.

With no information as to size or shape of the stampings, it is not possible to suggest more than the method of applying drying heat, but if the stampings are large enough to be hung on racks they can be heated on both sides sufficiently to vaporize and drive off any volatile residue and clear the recesses of any moisture (condensed humidity) which may be present with a pass or exposure of from 60 to 120 seconds. If the parts are small and must be palleted or carried in trays, they must be turned once during the heating, so as to expose both sides to the drying process —this, of course, if the parts are to be lacquered on both sides.

Those of us working below the "filibuster" line can never overlook the humidity factor, and I wonder that the two local paint representatives did not point an accusing finger at this possible cause.—E. STERRETT.

*The etching agent should be added just prior to use.

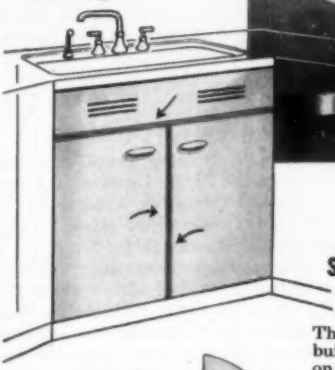
Detrex Cleaning Materials Have New Trade Name

Detrex Corporation, Detroit 32, Mich., is extending the use of its registered trade name "Detrex" for identification of alkali cleaning compounds, strippers, emulsion cleaners, and wet spray booth materials that it manufactures.

The trade name "Detrex" is followed by a number or letters to indicate the different materials to which it is applied. These identifying numbers or letters are not being changed.

The registered trade name "Triad" is now being reserved exclusively for use in identifying Detrex Corporation's chlorinated hydrocarbon solvents for vapor degreasing and oil extraction.

HOW TO SHIP A KITCHEN *Safely!*



Get Non-Staining Tape #158 in Handy rolls... At your Jobber's.

Movable parts held firmly in transit by

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NON-STAINING CLOTH TAPE #158

PULLS OFF CLEAN • LEAVES NO STAIN

The St. Charles Manufacturing Company . . . custom-builders of high-quality steel kitchen cabinets . . . relies on Non-Staining Tape No. 158 to hold movable parts firmly and to protect finish and edges.

At destination, the tape pulls off clean and leaves no stain on the original gleaming finish. Edges and all other taped portions arrive in perfect factory condition.

Next time YOU have a "tricky" shipping problem . . . save time, money, damages . . . with clean, easy-to-use Non-Staining Tape No. 158. For test samples, write Dept. 4-4, 2500 S. Dearborn St., Chicago 16.

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Industrial Adhesive Tape

PRESSURE SENSITIVE

Production Short Cuts to Reduce Costs • Research to Speed and Improve Methods

Sterling's New Portable Electric Sander

The "Century" is the name of a new portable electric sander weighing only 5-lbs., announced by Sterling Tool Products Co., 1334-M Milwaukee Ave., Chicago 22, Ill. It has a non-stalling high-speed motor encased in a die-cast aluminum alloy housing.

This compact easy-to-handle sander operates on the "Orbital Motion" sanding action principle which has proved to be so effective in producing fine uniform sanding results, while at the same time enabling the operator to control the exact amount of surface material to be removed. This type of action permits sanding of parallel boards with opposing grain structures without the risk of grit scratches.

Due to its small size (4-in. high) and low clearance, it can be used to sand up close to corners and trim or under low obstacles without risk of damage. Because of its light weight the "Century" can be operated in an inverted position where necessary.

This sander permits the use of standard size abrasive sheets cut in thirds. Four or five sheets can be loaded on the pad at one time.

Sterling's new "Century" electric sander.

New Dust Respirator

A new S-600 Dust Respirator, approved by the U. S. Bureau of Mines for Type-A dusts, is announced by Pulmosan Safety Equipment Corp., 644 Pacific St., Brooklyn 17, N.Y. It features a silica dust filter, exhalation valve, improved vision aluminum body which is easily adjustable to fit any facial contour, black alumilited parts for resistance to corrosion and light reflection, double nylon elastic headbands which resist acids, alkalies and perspiration; and a patented rubber-face cushion for snug comfortable fit.

New Perspiration-Resistant Finish Developed by Atlas

Development of a clear, fast-baking finish for metal with unusually high perspiration resistance is announced by the Industrial Finishes Department of the Atlas Powder Co., Stamford, Conn. and North Chicago, Ill.

Known as Perspiration-Resistant Clear Durante 115-49, this new Zapon

STOP!

don't shoot yet . . .

The biggest obstacles to good paint, varnish or enamel jobs are the little particles and specks of grit, dust and lint, that accumulate on the surfaces to be finished. They cannot be gotten rid of with a dry cloth or with an air hose. The only way to effectively remove them is with a Tack Rag.

The "Dust-All" Tack Rag chemically treated for the purpose, used for wiping surfaces before finishing, is definite assurance at the cost of only a few pennies, that a satisfactory finish job will result.

Ask us about the "Dust-All" Tack Rag; what it will do; how it will actually save money on finishing operations.

The
"DUST-ALL"
TACK RAG
Be sure you get it in the Red Checked Bag

Used on practically any type of product (metal or wood) the "Dust-All" Tack Rag will help eliminate spoilages and assure a finer finish.

HARDING
Manufacturing Co.
10606 Gratiot Ave., Detroit 13, Mich.

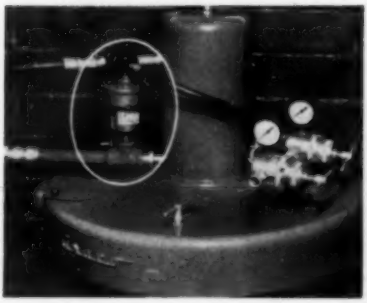
finish is already being used by several leading brass fabricators making lipstick cases, compacts and fountain pen caps. Applied to brass, the coating has passed a laboratory perspiration test of 149 hours and remains unaffected after 500 hours in salt spray and 1300 hours in humidity. This new member of the Duranite family possesses exceptional hardness and shows no effect after 300 hours in the weatherometer. Duranite 115-49 is unusually pale for a material with such characteristics.

The new clear finish can be applied either by dip or spray. The baking cycle is five minutes at 350° F. or equivalent.

Valve Prevents Surging

A new surge eliminator valve for use with any spray gun which cuts the pump in or out as the gun is used, is announced by the A. Shelburne Co., 739 Ceres Ave., Los Angeles, Calif., designers of spray gun equipment. The new valve, known as the "Steadyflow," is a small compact unit weighing less than 10-lbs. It is easily attached to any type of air displacement pump. No extra hose to the gun is necessary.

The valve prevents surging, puddling or gobbing when spraying begins. All straining or separation of materials, due to constant high material pressure, is eliminated; and a smooth even spray is produced. The pump automatically idles when spraying stops. The valve can be used with any material. It is especially useful with heavy compounds such as those used for roofing, autobody insulation, texture pains and accoustical coatings.

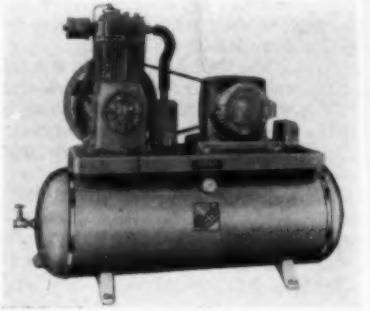


Surge eliminator valve (in white loop).

Two-Stage Air Compressor

Six new models of 2-stage air compressors have been added to the spray painting and equipment line of the Binks Mfg. Co., 3116 Carroll Ave., Chicago 12, Ill.

The new models are designed to supply compressed air for spray painting as well as air at higher pressures than those normally used for spray finishing. In this way, the same compressor serves as a source of air for various uses.



Compact unit for supplying compressed air.

These new compressors are built for 200-lbs. working pressure. Tanks are tested to 300-lbs. The standard pressure setting is 160 to 200-lbs. Special settings are also available.

Displacement of the new models range from 7.13 to 40-cu. ft. per min-

EXTRAS . . .
AT NO EXTRA COST

● Perfection Synthetic Flat Finishes are made by a new and different Perfecoat process where flattening is accomplished by chemical rather than foreign flattening agents. These are the EXTRAS in Perfection.

● A Beautiful Rubbed Effect Appearance
● Water-proof and Liquor-proof
● Free from Orange Peel
● Does not Change Color upon Baking
● A Perfectly Clear Finish to Bring Out the Utmost Beauty of Wood and Stain
● Will Dull Rub or Take a Mirror Polish
● Will Not Haze or Sweat Back

● Perfection manufactures four types of finishes to conform to your needs, pocketbook and drying schedule.

PERFECTION PAINT & COLOR COMPANY
715 E. Maryland St., Indianapolis 2, Indiana

Perfection SYNTHETIC FLAT FINISHES
WATER-PROOF LIQUOR-PROOF

ute. They are powered by motors ranging from 1½ to 10-hp.

A constant-level lubrication system is used with all models, except the 10-hp. unit, which is pressure lubricated. A patented loadless starting mechanism completely unloads the compressor until the motor has attained its full-load speed on re-start. Multiple V-belt drive is supplied for units of 2-hp. and up.

Automatic Rack Washer

There is available a completely enclosed automatic washer for castered racks. It is called the A-F Rack Washer.

Racks covered with grease and dirt, cutting oil, metal chips and grinding dust are simply pushed into this floor level washer. The door is closed and a push button starts the washer. It completes the washing job in three minutes and automatically shuts itself off. It is possible to clean 100 racks a day with no special operator in charge. Each trucker removes a clean rack, places the soiled rack in the washer, and after pressing the starting button, goes about his business of trucking.

Cleans portable racks used in finishing rooms.

For further details write The Alvey-Ferguson Co., Dept. IF, Cincinnati 9, Ohio.

M. & W. Color Card for Casket Makers

An attractive color card has been designed for the casket industry by Maas & Waldstein Co., manufacturer of industrial finishes, Newark, N. J. It includes 16 colorful metallic shades (metalustre enamels) which, according to industrial designers, are receiving wide acceptance among progressive manufacturers in the casket industry. New caskets, both wood and metal, are being finished in various shades of lavender, silver and gold.

In addition to the 16 color chips this color card provides additional information pertaining to casket primers, putties and topcoats, as well as special lacquers for casket hardware. It is available at no charge by writing to the M & W Division nearest you in Boston, Chicago, Los Angeles or Newark, N. J.

New Aluminum Paints Prevent Mold and Rot

According to a news release by Reynolds Metals Co., Louisville, Kentucky, new paints for positive protection of wood and other organic surfaces against mold and rot have just been introduced by paint manufacturers using Reynolized Aluminum Pigment.

Using aluminum particles as a base, this new pigment contains agents integrated by a special process. When mixed with the usual vehicles designed for this type of paint, a per-

FLOCK

Short-cut fibres of all types used to produce effects of suede, felt, velvet, mohair, velour, carpet on any surface in an economical manner.

Let our 25 years experience be your guide to quality results at lowest possible cost.

Rayon Processing Co. of R. I., Inc.

PIONEER PRODUCERS OF SURFACE COATING FLOCKS

55 MOSHASSUCK STREET **PAWTUCKET, R. I.**

POLLAK PAINT CO.
715 Main St.
Buffalo, N. Y.

LAMBERT-NEW ENGLAND CO.
79 Sudbury St.
Boston, Mass.

H. R. MEININGER CO.
409 16th St.
Denver, Colo.

J. GORDON SMITH CO.
3901 Main St.
Dallas, Texas

fect preventative against mold and rot is provided.

In exhaustive tests conducted by independent laboratories, and by practical applications over a period of several years this new aluminum pigment has performed its function in dry as well as extremely humid climates including several islands in the Pacific Area.

Manufactured in paste form by the Reynolds Metals Co., this new aluminum pigment is similar to that found in standard aluminum paints. Generally, two pounds of the pigment mixed into a gallon of usual aluminum paint vehicle is sufficient for the most severe requirements.

Water Washed Air Without Use of Pumps or Nozzles

The type N Roto-Clone, used for the collection and control of dust generated in manufacturing and process operations has been re-designed to permit wider application and improved performance.

Cutaway view of Type N Roto-Clone.

Type N Roto-Clone is a hydrostatic precipitator that cleans the air by the combined action of centrifugal force and a thorough mixing of water and dust-laden air, re-using the water without the use of recirculating pumps or spray nozzles.

The new design 2 Type N Roto-Clone with capacities through 48,000 c.f.m. maintains a lower pressure drop with the same cleaning efficiency and water recirculation rate and can be operated from 50% to 120% of its normal rating without affecting its collecting efficiency. All sizes are available in either manual clean-out, sludge ejector or hopper bottom arrangement. Bulletin No. 277-A will be sent free, upon request, by the American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

Flexible Speedbake Synthetic Has Good Adhesion

Development of a speedbake synthetic which adheres tenaciously to highly polished brass, stainless steel, aluminum and other surfaces that ordinarily resist adhesion of organic coatings, is announced by the Research Division of Metric Lacquer Mfg. Co., 62 Woolsey St., Irvington, N. J. Tests conducted on polished brass, for example, show that this new decorative coating withstands a 28-in. Gardner impact test, and a 180° bend over a 1/8-in. mandrel, without cracking or flaking. Similar results have been demonstrated on stainless steel and aluminum test panels.

On most thin gauge metals, baking is accomplished at 275° F. for 15 minutes. For brass and for thick gauges of other metals, a somewhat longer baking time and a slightly

NEW PERIOD
Production Finishes
BAKING ENAMELS
LACQUERS SHELLAC
ENAMELS FILLERS
SEALERS SUPPLIES
PRIMERS STAINS
SYNTHETICS VARNISHES
Salesmanship Returns
America's selling, advertising and merchandising skill must reach new heights to move the tremendous output of her gigantic industrial machine. Designers and production engineers must strive to produce better products at prices that consumers can afford. Quality must be maintained and methods must be improved.
What is your problem? A new and better finish for a conveyor production line? A more attractive finish that will put "sell" on the exterior of your product? Whatever it is, submit your problem to us for prompt and satisfactory results, without obligation, of course.
MANUFACTURERS OF FINE WOOD AND METAL PRODUCTION FINISHES.
NEW PERIOD
Production Finishes
NEW YORK WOODFINISHERS' Supply Co.
109 JILLAY STREET BROOKLYN, N. Y.

higher heat are recommended. Although designed primarily for metal surfaces, this synthetic finish is applicable to phenolic plastics.

In addition to the high adhesion value of this new flexible synthetic, a hard, smooth and uniform surface is achieved, having high resistance to chemicals and solvents and remarkable resistance to abrasion. The material is produced in all colors, prepared specifically for spray application. Variations which will permit dipping and roller coating methods are also available.

Light Duty Cleaner for Vacuum or Blow-Off

A new light-weight hand-type cleaner for use in light factory jobs is announced by Ideal Industries, Inc., Sycamore, Ill.

It weighs only 8¼-lbs. without the 20-ft. cord, yet has plenty of power to remove dust, dirt and grit from machines, shelves, overhead pipes, etc. It is well balanced and therefore easy to handle.

A blower nozzle is furnished as standard equipment. Air velocity at the blowing nozzle is 18,000-ft. per minute. Suction air volume (1½-in. hose) is 120-cu. ft. per minute.

Corrosion Resistant Coating for Wood Tanks

The Carboline Co., 502 N. Taylor St., St. Louis 8, Mo., announces an entirely new type of corrosion-resisting coating for wood tanks, floors, racks, tables, fume hoods and miscellaneous equipment.

1) The coating cannot be separated from the wood. Joints made with Carbo-Kote are stronger than the wood itself. A sample of coated wood can be immersed in water and boiled indefinitely. The coating will not soften or come off. It remains unaffected.

2) Carbo-Kote resists most acids, alkalis, solvents and mixtures of such corrosives. Chief exception is nitric acid; also sulfuric acid over 45% concentration.

3) The coated surface is hard; it resists wear; is easy to clean.

4) Carbo-Kote films, after setting, will flex about 10% to 15%. The coating "sets" by polymerization at room temperature. Neither evaporation nor oxidation are involved in the coating's application or use.

Carbo-Kote was developed primarily for coating wood, but it works equally well on rubber, carbon and fiberglass. It is expected that by the use of a special primer it can be used on steel and other such surfaces, of which more will come later.

Spray Gun Powered with CO_2 Cartridge

A self-contained portable spray gun, known as the "Spray-Gat", has been introduced by the Sullivan-Becker Co., of Kenosha, Wisc. The gun needs no hose, compressor, motor or

Cartridge in handle supplies "power".

Everything for the Finishing Room . . .

LACQUERS
SEALERS
STAINS
FILLERS
SYNTHETICS
PRIMERS
WOOD BLEACH
VARNISHES

The Gilbert Spruance Company

RICHMOND AND TIOGA STREETS
PHILADELPHIA 34, PENNA.

other attachments. Power is supplied by a CO^2 cartridge which fits into the handle. Cast aluminum body of the gun has rust-resisting brass and stainless steel inserts. The steel container is loaded from the bottom, and holds 21-oz. of liquid.

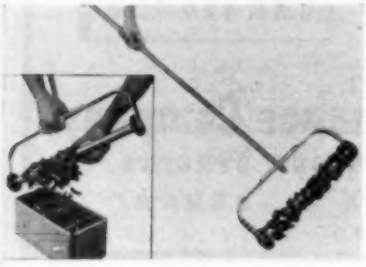
"Spray-Gat" can be taken to the job, anywhere, for painting, oiling, mothproofing, disinfecting, waterproofing, and other spraying jobs. Extra cartridges are supplied at low cost.

Magnet Picks up Metal on Bottom of Dip Tank

A new long handled tubular magnet called "Multilift Rotary Tank Magnetool" is offered by Multifinish Mfg. Co., 2114 Monroe Ave., Dept. 393, Detroit 7, Mich. No contact with iron and steel parts is necessary, as the parts jump from one to two inches to the horizontal magnetic tube.

The tool will resist ordinary acid and alkali solutions, such as those used in plating, cleaning, etc., and is completely self-draining. The tool is lowered into the tank and propelled in carpet sweeper fashion on its wheels, or it may be moved up and down.

The tube loads on its entire 360° of surface. Unloading is accomplished by pushing the wiper ring from one end of the tube to the opposite end where a non-magnetic area causes instant load release.



Magnetic pick up of iron and steel parts.

Electric Immersion Heater

An entirely automatic immersion heater, with adjustable thermostat control, is announced by The Still-Man Co., 433 E. 164th St., New York 56, N.Y. This unit heats liquids within tanks, kettles, tumblers, etc., where the liquids absorb all the heat generated.

Five immersion lengths from 5-in. to 20-in. are available in acid-resisting stainless steel. The units are rated at 1000-watts and plug into any standard 110-volt A.C. outlet.

Photoelectric Smoke Detector

A single unit photoelectric smoke detector for early detection of incipient fires in hazardous plant and warehouse areas has been developed by Walter Kidde & Co., Inc., 40 E. 34th St., New York 16, N. Y.

In industrial plants where fire would start slowly, smoulder and produce smoke for some time before flames actually break out, photoelectric smoke detection equipment often reveal the presence of smoke before thermostatic or heat actuator alarms or devices are affected.

The control panel is the nerve center of the smoke detector. It not only transmits fire alarms, but also gives warning of mechanical and electrical disturbances within the apparatus.

This smoke detector is a useful adjunct to built-in carbon dioxide fire-extinguishing systems, either automatically or manually operated, when the smoke detector is tied in with controls to operate ventilating dampers, door-closing releases or electrical equipment power cut-off.

Is the finish on your product sales-resistant or wear-resistant?

PRATT & LAMBERT-INC.
Industrial Finishes
1849 — One Hundredth Anniversary — 1949
NEW YORK BUFFALO CHICAGO
FORT ERIE, ONT.

Electric Paint Paddle

A new tool just put on the market by Red Devil Tools, 130 Coit St., Irvington 11, N. J., is known as the Red Devil No. 31 Junior Paint Mixer, and will undoubtedy be a boon to master painters and finishers.

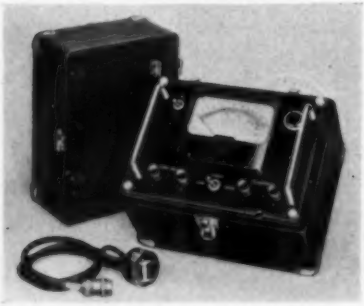
The tool is driven by a fractional horsepower motor which operates on 110-volt AC. The mixing parts can be snapped apart from the motor by twisting the baffle plates and removing the agitator. The upper blade on the mixing shaft is adjustable and should be set one inch below the surface of the paint.

A splash plate prevents the material in the can from getting out of hand. A set screw clamp comes with the tool to hold the mixer in position in the can, but the tool can readily be used without clamp if preferred.

Electric Thickness Gauge

The Coatingage, an instrument for measuring the thickness of non-magnetic coatings on iron or steel is offered by Branson Instruments, Inc., 436 Fairfield Ave., Stamford, Conn.

Measurements are made rapidly, without damage to the coating, and the thickness is indicated directly on the meter of the instrument. Two concentric scales cover a range of 0.0001-in. to 0.50-in. The instrument weighs 10-lbs. and has self-contained batteries which permit its use in the field as well as in the laboratory or on the production line.



Measures thickness of coatings accurately.

Typical applications for the Coatingage include the measurement of the thickness of paints, enamels, metal plating, protective coatings, scale or coke deposits.

"Scotch" Tape for Heavy Packaging

A second "Scotch" brand filament tape for heavy duty packaging was made nationally available in April by Minnesota Mining & Mfg. Co., St. Paul, Minn.

Designed with an acetate film backing instead of paper, the new tape is waterproof, and is thinner than the paper-backed filament tape, making it easier to handle and enabling packages banded with it to slide freely.

Caliper of the acetate film tape is 7 to 9 mils, as compared to 13 to 15 mils for the paper-backed tape announced in January by the same manufacturer.

Both tapes have a tensile strength of 180-lbs. per inch of width, and a tear resistance greater than the 1600 gram-centimeters.

Conveyorized Dry-Off Oven

Optimus Equipment Co., 149 Water St., Matawan, N. J., announces the "Spotless Dryer," designed to dry parts on the conveyor as they leave surface preparation tanks or the metal washer.

High velocity jet nozzles, specially designed and located, reduce drying time to a minimum. These nozzles are directional and adjustable. Combinations of cold and hot air drying

RONCI SPEEDIP WHIRL ENAMELER

Made In Two Sizes, R-100 and R-200 Capacity 312-cu.in. and 1206-cu.in.

IDEAL FOR LACQUERING AND ENAMELING SMALL PARTS UP TO 7-IN. IN LENGTH

CUTS COSTS, SAVES UP TO 80% OF MATERIAL

Carries up to 75-lbs. per load, and up to 30 loads per hour can be coated with lacquer or enamel in these machines.

All operations are within the machine. Dipping tank is raised, submerging the parts in the basket, and then lowered and the parts whirled, throwing off excess material. No additional outside tanks required; no cleaning necessary when changing colors; no loss of material.

PROMPT DELIVERIES

Write for further information and submit samples to be coated.

RONCI MACHINE COMPANY

A Division of F. Ronci Co., Inc.

2 ATLANTIC BOULEVARD CENTREDALE 11, R. I.

WABASH PRODUCTS COMPANY

16TH AND HULMAN STREETS

TERRE HAUTE, INDIANA

SIMAX

THE FINISH THAT LASTS

Industrial Finishes

Lacquers Enamels Sealers

Stains Varnishes Thinners

Synthetics, all types

HOW . . .

Cellusuede FLOCK SOLVED A PROBLEM

PROBLEM: Give silver chests an interior coating that protects contents and also presents a rich, high-quality appearance.

SOLUTION: A nationally-known manufacturer of silver chests used rayon Cellusuede Flock to get a sales-winning effect. Cellusuede was applied by spray gun and production was materially increased over previous methods.

How About You?

When you want the decorative beauty of velvet or the functional utility of a mar-proof surface . . . finish with economical, easy-to-apply Cellusuede Flock. Available in colors and lengths to suit your requirements.

Send for Samples, Prices, Literature.

Cellusuede Products, Inc.
ROCKFORD, ILLINOIS

are employed. Cold blast removes water by mechanical action, leaving a film which is removed by the following hot air blast. Provisions are made to recirculate all possible heated air.

These dryers require a minimum of floor space. Fans, heating units and motors are all located within the framework. Air for drying can be heated by steam, gas or electricity.

Flexible Chain Conveyor

Chain-O-Flex is the name of the conveyor manufactured by Industrial Equipment Co., 315 North Ada St., Chicago 7, Ill.

Designed for loads up to 50-lbs. per hook when spaced not closer than 12-in. centers, this conveyor is offered as a packaged product. Any practical pattern of a conveyor system may be quickly assembled with the proper basic parts selected for the particular installation.

Any mechanic with ordinary hand tools can assemble and install this conveyor, as all parts bolt together like an erector set.

Variable speeds are obtained by adjusting a hand wheel on the drive unit which will provide 3/1 speed ratio. Multiple drive units may be used on extremely long systems.

For Safe Pouring of Acids

A new type unbreakable safety container for handling acids is announced by Automotive Rubber Co., Inc., 8601 Epworth Blvd., Detroit 4, Mich.

Equipped with a long 14-in. spout with curved neck that rests securely on the edge of the tank, the design provides for safe pouring of acids where a reaction is expected. At present it is offered as standard in the five gallon size. *(To page 114)*

CLAREMONT FLOCK

American Industry's Successfully Versatile Finishing Material

Decoratively fascinating and industrially proven . . . Claremont Flock is successfully serving an ever-expanding variety of applications and products as a finishing material. Available in neutral shades and in 18 brilliant colors of various fibre lengths, Claremont Flock (rayon, cotton, wool) produces rich, deep-tufted surfaces that economically bespeak luxury. Can be applied to glass, wood, paper, metal, fabric or plastic of any shape or size . . . quickly and easily. Won't crack, break or rub-off!

Speaker grilles, turn-tables, toys, velour and suede papers, greeting cards, banners, signs, displays, packaging and the fashion field have achieved unusual effects with Claremont Flock. Likewise, it has been effectively utilized as a protective bottom surface on items to prevent wear and marring . . . and in creating decorative styling for automobile and airplane interiors.

For finishing, coating, insulating, sound-deadening, shock-absorption, bolstering, etc., Claremont Flock's instant availability makes it most desirable for general industrial purposes.

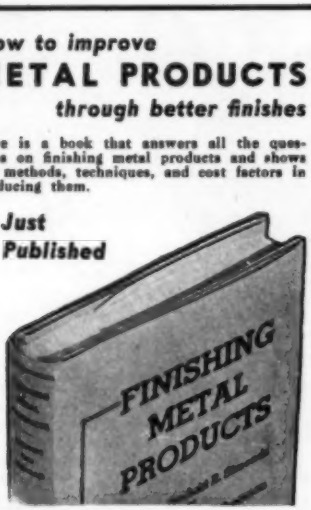
WRITE FOR SAMPLES AND DETAILS

CLAREMONT WASTE MFG. CO.
CLAREMONT, NEW HAMPSHIRE

How to improve
METAL PRODUCTS
through better finishes

Here is a book that answers all the questions on finishing metal products and shows the methods, techniques, and cost factors in producing them.

Just Published



FINISHING METAL PRODUCTS

New Second Edition describes all recent developments in this field.

By HERBERT R. SIMONDS and ADOLPH BREGMAN, Consulting Engineers. 352 *pages*, 5x8, 135 *illustrations*, $4.00.

A COMPLETE PRACTICAL MANUAL covering usual types of finishing—galvanizing, polishing, plating, lacquering, painting. Also discusses fully such subjects as use of color and production and use of prefinished materials.

COVERS FINISHING from a business and sales standpoint. Deals with methods that improve results and reduce costs. Helps you determine types of finish with greatest sales appeal.

EXPLAINS SHOP TECHNIQUES. Tells how to reduce polishing and buffing costs. Gives techniques for cadmium plating, chromium plating, spray coating. Tells how to use enamels and lacquers in metal parts production.

This up-to-date, handy manual should be at the finger-tips of plant managers, superintendents and foremen. Send your remittance today to

INDUSTRIAL FINISHING
1142 N. Meridian St. · Indianapolis 4, Ind.

Contour Spray Stencils

Contour spray stencils for decorating and marking concave, convex and irregular shaped objects with sprayed paint or abrasive are now being produced by Adolph Gottscho, Inc., 190 Duane St., New York 13, N. Y., manufacturer of marking equipment.

Made in various gauges of brass and copper to conform closely to the contour of glass, metal, fiber and plastic containers and products, these stencils are said to mask out backgrounds effectively so that trademarks and other designs reproduce clear and sharp.

Small Vapor Degreaser Electrically Operated

Circo Products Co., 12117 Berea Road, Cleveland 1, Ohio, announces the "Cub", a new hot vapor stainless steel degreaser about 18-in. x 23-in., 42½-in. high, electrically operated and automatically controlled for removing grease and oil from metal products.

Due to its size, it fits conveniently into maintenance or production departments, close to operations, making it possible to clean as you go.

Other Circo degreasers are available in a number of standard sizes, to enable users to equip themselves with degreasers of a capacity most suitable for their specific requirements.

Industrial Vacuum Cleaner

Three sizes of industrial vacuum cleaner are offered by Breuer Electric Mfg. Co., 5100 Ravenswood Ave., Chicago 40, Ill. All are of the cloth bag and storage tank type mounted on swivel ballbearing casters.

One model, powered by a 3/5-hp. motor, has a 10-gallon steel tank. An-

other model is equipped with a 1-hp. motor and a 12-gal. tank. The third model is powered by a 1 1/3-hp. motor and also has a 12-gallon tank.

Fine dust is caught and retained in the cloth bag, while heavy particles drop into the steel tank.

A feature of these vacuum cleaners is the motor fan unit which is mounted on rubber on top of the machine and fits partially within the tank. It can be removed instantly to be used as a blower unit for blowing off motors and machinery.

All models are approved by Underwriters Laboratories.

Blast Cleaning for Precision Parts

Liquid Honing, developed by the Vapor Blast Mfg. Co., 3025 W. Atkinson Ave., Milwaukee 9, Wisc., works with equal effectiveness on everything from delicate spark plugs to the large aluminum surfaces of aircraft. Engines, armament parts, plant machinery and tools can all be cleaned by Liquid Honing.

The process uses microscopic particles of silica and novaculite suspended in liquid and jettisoned by high pressure air to provide the blasting effect. By varying the size of the abrasive particles, gun distances and blasting time, it is possible to process the most delicate, precision parts. It leaves the surface clean and gives a smooth finish suitable for paint.

Dip Finish Brightens Dull Aluminum

Chemlustre, a new finish for aluminum, has been developed by Chemclean Products Corp., 64 Sixth Ave., New York 13, N. Y. This finish is recommended for giving badly weathered aluminum a uniform and bright

SAFEGUARD YOUR SPRAY BOOTHS

Layers of inflammable paint come off more quickly if you have applied Wyandotte Spray Booth Coating first. Only a thin coating makes cleaning easier, speedier, more economical.

And you can reduce your floor-cleaning costs with Wyandotte F-100*. Even heavy soil stands no chance against this remarkable compound.

For more information about these Wyandotte Products, write the Wyandotte Chemicals Corporation, Wyandotte, Michigan.

***Registered trade-mark**

NEW
SILICONE-BASE HEAT RESISTANT FINISH

MICO Aluminum hailed by leading manufacturers as the most heat-stable finish ever to be developed for every day commercial use.

NOW—a heat resistant finish that protects—*virtually doubles the life*—of vital parts in hundreds of products like mufflers, engines, boilers, ovens, oil and gas burners. MICO Aluminum has passed 23 different tests for thermal, chemical, and physical stability, and has thoroughly proved itself on the production line. *Investigate* MICO. *Get the facts!* Write today for your copy of the new MICO folder . . .

MICO . . . THE SILICONE BASE FINISH THAT WITHSTANDS 1000° (F.)—WITHOUT SURFACE BREAKDOWN.

Manufactured Exclusively by
MIDLAND INDUSTRIAL FINISHES COMPANY
Dept. IF-4 Waukegan, Illinois
ENAMELS • SYNTHETICS • LACQUERS • VARNISHES

Public Demand Persists for MODERN

WOOD BLEACH

Secure Your Results

Make PERFECT
BLANCHIT-BLEACHED
Finishes

Use

BLANCHIT

Trade Mark Reg. U. S. Pat. Off.

THE ORIGINAL

A patented wood bleach
which has been improved.

L. R. van ALLEN CO.

Patent Licensee

Chicago 54, Ill.

GLOBE BRANDS

BRONZE POWDERS...
all shades and grades
for various purposes

•

ALUMINUM POWDERS AND PASTES

•

GOLD, SILVER, COMPOSITION AND ALUMINUM LEAF

B. F. DRAKENFELD & CO., INC.
45-47 Park Place New York 7, N. Y.

Your partner in Solving Bronze Powder Problems

Drakenfeld

appearance, and for bringing aluminum products to a highly lustrous, semi-satin finish. In many applications where aluminum is to be anodized, several or all mechanical operations such as polishing, etc., can be eliminated by the use of this material.

Cleaning Wiping Rags

CLEAN YOUR wiping rags for use again—and save money. Reflecting its determination to cut costs in 1949, SKF Industries, Inc., Philadelphia, Pa., has gone into the dry cleaning business for itself. The firm is a big user of polishing tape, work gloves and wiping cloths, and the management expects to save thousands of dollars annually by cleaning these items, and perhaps make them last two or three times longer. Here an operator removes tape which before cleaning was soiled by polishing abrasive, like the tape in the pile at right. This same idea could be used profitably by many concerns that have finishing departments.

Cleaning, wiping and polishing cloths

New Control Methods For Radiant Heating

Members of the A.I.E.E. Radiant Heating Committee made inspection trips to Leeds & Northrup, and the Brown Instrument Div. of Minneapolis-Honeywell Co., during their recent 2-day conference in Philadelphia, Pa.

The conference and inspection trips were arranged by Mr. Chas. E. Russell of the Philadelphia Elec. Co. Mr. C. T. Prendergast of the Western Elec. Co. is in charge of the Committee activities on process control.

New types of electronic instruments were inspected for recording actual product temperatures as used for curing protective coatings, water evaporation and other industrial processing requirements.

The Committee is cooperating with leading instrument manufacturers in determining requirements and improved methods for controlling heating processes where air temperature and other indirect means cannot be successfully employed.

Changes in Milwaukee Paint Division of P.P.G. Co.

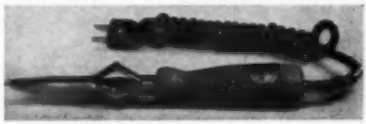
Retirement of Frederick L. Theurer, divisional director of the Milwaukee Paint Division, Pittsburgh Plate Glass Co., is announced. Mr. Theurer will be succeeded by M. R. Randlett who has served as his assistant since 1945.

Mr. Randlett, the new divisional director, joined Pittsburgh Plate Glass Co.'s Houston warehouse staff in 1922. After serving as Houston paint manager for two years, Randlett was transferred to the Newark Paint Division as assistant trade sales manager in 1929. During 1930 he was transferred to a similar position with the Milwaukee organization. He became trade sales manager on May 1, 1931, and assistant divisional director September 15, 1945.

MacDermid to Develop and Promote "Troxide"

MacDermid Inc. of Waterbury, Conn., announces purchase of the manufacturing and distribution rights of "Troxide" compounds from the Waverly Petroleum Products Co. of Philadelphia. Simultaneously, MacDermid announces that Thomas F. O'Brien, who formerly headed the Industrial Chemical Division of Waverly, will take charge of a newly formed department to develop and promote "Troxide" and allied acid salt compounds for metal finishing and to assist in the development of new MacDermid products to be announced shortly. Mr. O'Brien, a metallurgical engineer, was formerly consulting engineer to several large corporations.

IT'S NEW



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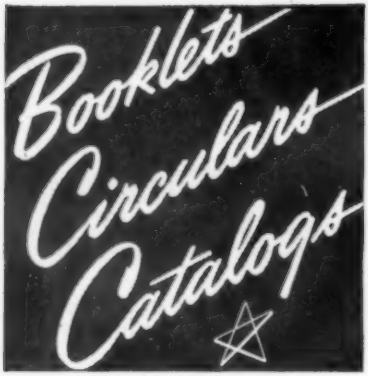

Flexible Ventilating Piping and Hose

Catalog No. 30, published by the American Ventilating Hose Co., 15 Park Row, New York 7, N. Y., contains 12 pages 8½x11-in. which illustrate and describe flexible piping and hose, with the various accessories and uses for same in industry.

Bulletin on Equipment to Reduce Humidity

If high humidity is affecting your manufacturing or finishing processes, perhaps the answer may be found in a free bulletin No. 216 published by Pittsburgh Lectrodryer Corp., P. O. Box 1766, Pittsburgh 30, Penna.

Hercules Technical Booklet On Cellulose Gum

New information on the physical properties of Hercules CMC cellulose gum is included in a revised technical booklet on this chemical, released by Hercules Powder Co., Wilmington, Dela. The booklet is 8½ x 11-in. and contains 12 pages bound in attractive paper covers.

Eastman Cellulose Esters, Revised Edition

Tennessee Eastman Corp., Kingsport, Tenn., has issued a revised edition of Eastman Cellulose Esters. It is available upon request from the company.

Contents of this eighth edition of the book are of interest to manufacturers, engineers, and researchers in the fields of chemistry, paint, lacquer and varnish, protective coatings and plastics. Included are the latest data on specifications and characteristics of the standard types of Eastman cellulose esters, cellulose acetate, cellulose triacetate, and cellulose acetate butyrate, together with information on their uses with solvents, plasticizers and resins.

The 33-page book is amply illustrated with tables and graphs. Covers are laminated with cellulose ester transparent sheet and spirally bound with extruded cellulose ester plastic.

Screen Stenciling Machine

A new 4-page bulletin gives information and shows an illustration of the Louft automatic screen process stenciling machine. A copy can be obtained by writing Louft Mfg. Co., 815 Third St., N. W., Washington, D. C.

Reflectometer Bulletin

Henry A. Gardner Laboratory, Inc., 4723 Elm St., Bethesda 14, Md., announces that it's new 10-page bulletin, entitled, "Description and Instructions on the Hunter Multipurpose Reflectometer" has just come off the press. This bulletin gives a detailed description and set of instructions, and contains much information about the Reflectometer not heretofore available. A copy will be sent on request.

Drum Rotator and Truck

A new bulletin shows several views and gives complete information on the Morse portable Rotator drum truck, designed for easily handling steel drums of finishing materials. Using the Rotator truck, a full 55-gallon drum on end can be quickly lifted off the floor to horizontal position and, if desired, it can be rotated by a motor driven mechanism, or it can be moved to another location. For a copy of the bulletin, write to Morse Mfg. Co., Inc., Syracuse 2, N. Y.

Folder of Pre-Plated Metals

A handy index to American Nickeloid's wide selection of pre-plated metals appears in the new Nickeloid Metal "Sampler" and File Folder, available to manufacturers and product designers interested in pre-finished metals and designs from American Nickeloid Co., Peru, Ill.

The die-cut Sampler, a 4-page, letter-size folder, contains samples of Nickeloid metals finished in chrome, copper, nickel and brass—available on zinc, steel, copper, brass and aluminum bases. In addition to actual samples in bright and satin finishes, striped and crimp designs, complete data is given on the sizes of sheets, coils and flat strips available.

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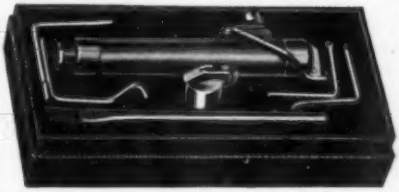

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Industrial FINISHING Editorial

More Ways to Stop Costly Wastage

With the return of a real competitive market all industry must seek ways to economize and stop waste. During and immediately following the war years, the rule was production and more production at any cost. It had to be that way. Now management is forced to be cost conscious.

One industrial plant that uses great quantities of abrasive wheels formerly threw away the worn wheels. Now they recoat the wheels with liquid glue and abrasive of the proper grit. When dry they are as good as new wheels. Only damaged wheels are thrown away.

Another manufacturer who uses a great many cotton gloves and wiping rags formerly sent them out to be laundered. The firm has gradually replaced the old gloves with new gloves of the reversible type—that is gloves that can be worn on either the right or left hand. This change has eliminated the time and labor formerly involved in sorting and pairing-up rights and lefts. Then the company installed an industrial washing machine that washes, rinses and spins the gloves half dry. A commercial gas-fired drier completes the job. One girl operates both the washer and drier, besides acting as an inspector to throw out torn gloves and worn wiping rags.

Still another plant that uses large quantities of mineral spirits for cleaning metal surfaces preparatory to applying finish coats has installed a solvent still. Formerly the mineral spirits were sometimes used beyond the saturation point, with the consequent justifiable kicks by the finishing department. Since the solvent still has been in operation, clean spirits are always available for the cleaning job—eliminating improperly cleaned surfaces and also saving used spirits that were formery drained into the sewer.

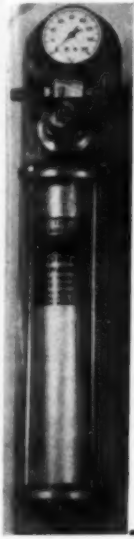
There are many ways of economizing. There are several ways of stopping waste. It always pays dividends to spend money to effect continuous economies.

If It Has Quality Identify it

From automobiles to refrigerators, manufacturers proudly display their names on their products. Trade marks, insignia, the type of lettering, and specific color combinations help to identify all sorts of products. Through the medium of advertising and constant display, the products become well known by their brand names.

In this connection it would seem that furniture manufacturers are overlooking what is commonly called a good bet. So far, with but few exceptions, none of them have taken up the brand name idea. One manufacturer of modern furniture has approached the idea by placing a neat aluminum plate bearing the firm name and location, also the designer's name, on the inside of a cabinet; and a small thin aluminum disc bearing the firm's trade mark in the top edge of a drawer front. This is a good beginning.

The argument has always been that



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With reducing unit for spray booths,	Without reducing unit,	Replacement filters, each
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people naturally expect their automobiles, refrigerators and washing machines to carry an ornamental brand name plate where it may be easily seen. These products fit into the garage, the kitchen or the basement of a home. But for any product used in the living, dining or bedroom, that is different. The public would frown on such an idea.

This argument can easily be exploded. Has any housewife ever dropped the fall-board of her piano to hide the name of the maker? Most people are proud to display the name of a high quality piano, radio or television set. In like manner they would be proud to display the name of a fine table, chest or chair.

Famous designers working with manufacturers could do much to individualize furniture. It would provide the manufacturer with greater scope in advertising and prevent substitution by the retail store. It would give the owner a vast amount of satisfaction in the possession of brand name furniture.

Appearance of Plant Reveals Character

What about the appearance of your plant? Can you be proud of it? Of course, every plant cannot be a showplace with modern streamlined buildings and landscaped grounds. Some plants were built back in the '90s, with lots of small segment-head windows, but the buildings are still good and are rendering the required service.

Is the plant yard cluttered up with stacks of boxes, barrels and drums either full or empty? Are fences straight and well kept? Are the accessory buildings properly designed and well built? These are all things that can be corrected at comparatively small cost. Cleaning up grounds, rebuilding fences and gradually eliminating old run-down accessory buildings will add much to the general appearance of any plant.

And what about signs bearing the firm name? I have especially noticed plants near a railroad, with no sign indicating the name of the concern or what it manufactures. Firm names have definite advertising value. Why not display the name prominently, and name the products made? Flood lights are available to light the sign at night. A timer can be set to turn the lights on and off at any desired hour.

It may be true that the town's people know whose plant it is and what it makes, but strangers do come

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CONSULT US REGARDING: HEAT TREATING OVENS • CORE OVENS
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to town and drive along the highway, or look out of train windows. Perhaps some of them are curious. Certainly displaying the firm's name and products could do no harm. Compared with any other form of advertising, the cost is less.

There is just something about a neat, well ordered plant, even though the buildings are old, that is an inspiration. What impresses the outsider will also impress the employee to the extent that he will take a greater pride in his work and in his appearance. This kind of pride makes for better results, more production and improved products.

Head of Rockford Varnish Co., R. L. Grantz, Dead

Mr. Raymond L. Grantz, age 54, President and Treasurer of the Rockford Varnish Co., Rockford, Ill., and associated with that concern for 30 years, died March 9.

He was a stockholder in a number of companies, a director of the Swedish-American hospital, a former director for the Third National bank, and a past president of the Rockford Country Club.

He is survived by his widow, a son, Birney who is studying at Phillip Exeter academy, a daughter, Marjorie Temple of Denver, and his mother.

Johnson Wax Appoints Salesmen

S. C. Johnson & Son, Inc., Racine, Wisc., announces five appointments in its sales organization.

F. I. Sharp, former area manager in the New York sales district, becomes district manager for a new district, with offices in Albany, N. Y.

J. J. McSunas, Jr., is appointed Merchandiser of Household Fabric Finishes. He will develop the selling and merchandising plans for "Drax" and a new Johnson fabric finish now being test-marketed.

J. C. Lansford and H. P. Friis were moved to Racine to take over newly created positions in the sales division. Lansford, former Memphis area manager, is now Assistant Sales Training Director under A. E. Gardner, Director. Friis was named Assistant Export Manager. He was formerly an export salesman with headquarters in Honolulu.

John Lindblad has been appointed Merchandiser of Wax-Fortified Interior Finishes.

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TACK RAG
BEFORE YOU SPRAY
Will Not Generate Heat
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in a Warm Place
Always Soft and "Tacky"

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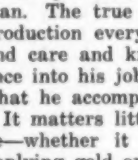
Honesty of Effort; Quality of Product

Whether something is old or whether it is new—this alone does not necessarily imply that it is always good. There are many old systems, methods and materials which have been modernized and which have shown great improvement as a result.

No substitute has yet been found for honesty of effort, pride of workmanship, and quality of product. Herein lies the difference between the ordinary worker and the real craftsman. The true craftsman gives full production every day. He puts skill and care and knowledge and experience into his job; and he is proud of what he accomplishes.

It matters little what his job may be—whether it is hand sanding or applying gold or silver leaf—there is always great satisfaction in the knowledge of a job well done. Industry needs more craftsman and fewer ordinary workers.



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Time tested—job tried. Nalco infra-red lamps have proven highly efficient and long-lasting for all types of drying, baking or heating installations . . self reflecting or clear glass type.

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Water Wash Spray Booths and W. W. Compounds

TO SOME production men there seems to be more or less mystery regarding the operation of water wash spray booths and water wash operating compound. Reason for the mystery, I don't know, because when one stops to think things over, it is very simple.

The water wash spray booth simply washes the overspray out of the air being exhausted by the exhaust fan. Manufacturers of some spray booths use nozzles to atomize the water; some use a series of ducts; another firm advertises no nozzles to clog, and their cut-away drawing of the washing operation shows five distinct washing actions of the overspray-laden air before it is exhausted.

The maintenance problem with water wash spray booths is greater than with the dry type spray booth, but the fire hazard is greatly reduced and overspray is not blown outside to be deposited on parked automobiles, the neighborhood washing, etc., and the

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use of water wash booths reduces insurance rates.

When the overspray has been washed out of the air and deposited in the water wash booth collecting pan, it should not sink to the bottom of the pan; if it does, it will be drawn toward and into the pump; it will cause excessive wear in the pump and may clog both pump and manifolds thereby destroying the washing action of the spray booth.

Operating compounds are formulated to float this overspray and remove its stickiness. Some operating compounds are advertised to sink the overspray. It is well to remember that the booth was designed to wash out the overspray; the compound was developed to remove stickiness, and float the overspray.

Your spray booth manufacturer knows what compound will operate successfully in his spray booth, taking into account your local water and the type of paint you are using. Isn't it advisable to follow his recommendations, rather than become confused with other peoples' ideas on the subject?

Yes, your spray booth manufacturers' operating compound may cost more than others on the market, but you will find his compound packed in humidity-proof containers. His compound generally consists of pure chemicals, with no fillers added to absorb moisture in the air, and it is not necessary to add more compound every few hours.

When cheap compounds are used, more compound must be added per work week than when using those recommended by your spray booth manufacturer; also, cleaning compound must be used more often. In my estimation, it is cheaper to pay more for your operating compound and reduce your operating costs by using less pure chemicals (than neutral-filler-loaded cheap compounds);

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It Peels Off!
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Applied by spray, brush or dip, forming a non-combustible film.
Protects all non-porous surfaces from overspray.
Peels off in one sheet.
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this will result in your using less cleaning compounds and clean up time, and there will be less overspray floating out into the free air, and less clogged manifolds.

Another matter that comes to mind is the old fashioned titrating test method used to decide how much compound to add to the water. Yes, it does look important to stand at the booth with several glass vials which turn different colors when adding water to them; however, it doesn't tell you anything you really want to know.

In pre-war days, when natural drying oils were used, we could control the correct amount of compound by watching the alkali content of the water. Then titration tests were the best method of deciding the amount of compound to use.

During the war it was necessary to blend different synthetic oils, which slowly led us into a new paint era. Now it is possible, by blending synthetic drying oils, to obtain almost any finish desired, such as acid-resistant paint, soap and bleach-resistant paint, etc. The blending of the synthetic oils calls for an entirely different chemical action in the water wash spray booth. It is now necessary to emulsify some of the oils at the same time that the stickiness is being removed from the other oils, vehicle, etc.

The pH value, or the strength of alkali used to emulsify some of the oils, is great enough to prevent a reading of the other chemicals that are removing the stickiness and floating the overspray.

The hand squeeze method of testing is simple and easy. Take a handful of sludge or overspray and squeeze out the water. If the sludge sticks to your hand, add more compound; if it breaks or powders, too much compound is being used. It should resemble putty in consistency to be correct. —W. Beacham, Crystal Laboratories.

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The Secret of Flock Finishing

SUCCESS in flock finishing or spraying depends entirely upon the adhesion of flock to the prepared surface.

The flock gun can do only one thing, and that is blow the finely cut rayon, cotton, etc., onto the adhesive covered surface. Of course, a poorly designed flock gun that causes the flock to pulsate when it leaves the gun nozzle will deposit an uneven finish, but if the gun is a "big name" gun designed by engineers who have had actual practical experience, a steady flow of evenly spaced flock particles will be deposited on the work.

If, when the flocked surfaces are dry and the excess flock is removed, the finish is uneven, the fault cannot be blamed on the type of flock, length of flock, or the spray gun; it must be the type of adhesive used.

There are several adhesives on the market, all good and all made to hold the flock to the item or sprayed base; but just because a certain adhesive works so well for the manufacturer across the street, it doesn't mean that the same adhesive will work so well for you. There are several things to take into consideration, for example:

1) Base material to be flocked. Maybe your neighbor is flock-finishing steel but you are flock-finishing soft wood; the adhesive will lay on the steel but sink into the wood.

2) A moist climate calls for a different adhesive than a dry climate.

3) The distance the adhesive gun is held from the work, the adhesive material, the atomizing pressure used; and the gun nozzle combination—all of these are factors in success or failure.

4) The elasticity of the sprayed base is something to consider also.

The point to remember is that some of your problems may not compare exactly with other manufacturers' problems; you must solve them yourself.

It is easy to do flock finishing if the adhesive is correct. Try a sample of every adhesive on the market and then decide for yourself the best one for your type of work. Once your production department has decided on the adhesive and you have tested the finished product for elasticity, adhesion

FOR ALL FINE FINISHES
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and weathering, stay with that adhesive. Don't be tempted to try something else because it is cheaper. Set your standards of quality high, and the man behind the spray gun can and will produce for you. Change those adhesive standards and the best man on your payroll, handling the finest flock gun made, may not be able to produce even passable results.—W. BEACHAM.

Furniture Finishes That Are Popular

THE retail furniture buyer is definitely showing greater caution in his selection of new furniture. Now that shortages are no longer a problem, only those manufacturers who make furniture that has real eye appeal can hope to compete in the current buyer's market. Quality finishing, therefore, is more important than ever before.

After talking with a number of merchandisers all over the country—men who have come in direct contact with the consumers—here are my conclusions as to what the public is looking for:

1) Light or modern finishing. Avoid covering up the natural grain of the wood with a "painted" effect. Coloring should be soft and pleasing to the eye. Above all, the finish should be smooth and uniform. Alcohol proofing is desirable, especially on table tops. The top coating should be hard enough to withstand ordinary wear and not chip easily. There should be no checking or rough spots.

2) Mahogany. Strive to obtain a clear smooth finish that shows depth, uniformity of color, and no light and dark spots. If you use a mahogany finish on some other wood, such as gum, be sure to get the right color. Too much red will not be a true mahogany. A high luster is desirable and appeals to many users.

3) Walnut. Walnut is a more porous wood and to obtain a smooth finish it is necessary that filler be properly applied and not washed out of the pores in the stain coat. Light shades of walnut seem to be more popular than the darker shades. The grain on

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walnut should be highlighted and the top coat should be finished in a semi-gloss with a rubbed effect.

4) Cherry. Uniformity of color is most important, even if it is necessary to cover the grain. A dull satin top coat is desirable, with careful standing to give the smoothest possible finish.

Mr. Manufacturer, does your product meet these requirements?—WM. B. LEIL.

Useful Accessories and Gadgets for Finishers

DID YOU ever see a finishing room shop that had the latest and best of equipment—*and yet there was nothing to work with?* By this I mean that they lacked many of the accessories which can so simplify the work in any finishing room. One reason for this is that many firms, while making it fairly easy for a department to secure a needed piece of major equipment, lack the facilities for making cash purchases of small articles that cannot be ordered from a catalog. Most of the articles to which I refer are easily located by browsing around hardware or paint stores, or even in the so-called five-and-tens.

It is surprising how many common household articles can serve a useful purpose in the finishing room. Funnels and kitchen strainers can be found in almost any size. The larger mesh strainers come in handy for quick removal of large lumps from viscuous materials. When these metal strainers are lined with a piece of organdy of the proper mesh, the same strainers are suitable for finer work. The organdy lining can be held in place with common spring-type clothes pins which, by the way, are also useful for holding some small articles to be sprayed.

If you need swivels to allow suspended articles to turn, there are

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many varieties on the hardware counters. One type is used on dog leashes; it has a quick-opening snap which grips tighter as the pull is increased.

Are the walls of your finishing room festooned with nails for hanging articles, or do you buy regular clothes hooks for the purpose. Inexpensive bathroom fixtures, such as towel racks, drinking glass and soap holders and tooth-brush racks can furnish safe receptacles for many tools and parts. Speaking of toothbrushes, there is nothing better for cleaning small paint brushes and spray guns, provided they are solvent-proof.

Dowel sticks can be purchased in bundles of assorted sizes—and when just one size is needed to hold something or to plug a hole, the cost of the entire bundle is repaid many times. Other useful supplies to have around are assorted corks, wire for hooks, and paper clips.

Incidently, do you have trouble spacing flat pieces for cleaning or bonderizing so that the solution will reach all surfaces? Put a couple of large paper clips on every other sheet and place any number upright in the basket. The chips will keep them apart.

Most of the tools used around a finishing room are abused, and the cheaper line sold in the five-and-tens serves just as well. Knives, scissors, wire-cutters, as well as pliers and screwdrivers, are always needed. A pair of pointed tweezers will often pick a speck of dust or lint from a wet panel without leaving a mark and thus save a reject. A common flour-sifter will do a small flock job or sift flock that is lumpy.

This could go on indefinitely, but a much better way is to go through the stores with an inquiring mind.—GEORGE A. CONRAD.

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George N. Decker has been appointed Comptroller of the Kellog Division of the American Brake Shoe Co., Rochester, N. Y. He will be located at the Division's headquarters in Rochester.